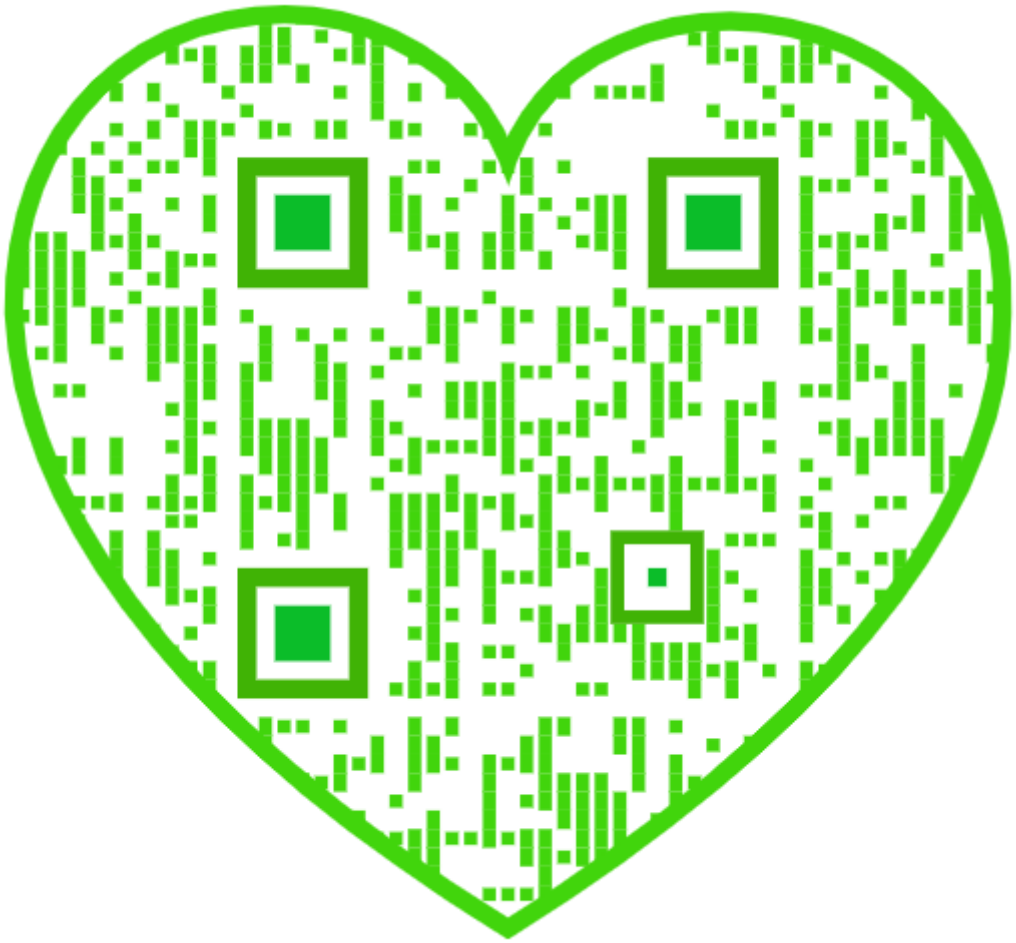
Theory and Practice
Veterinary Medicine

H. L. SCHUH, D. V. M.



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Notes on the Theory and Practice of Veterinary Medicine

The Basis of a Series of Lectures Delivered to the Students of the Grand Rapids Veterinary College

BY

DEAN HERMAN L. SCHUH, D. V. M.

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Notes on the Theory and Practice of Veterinary Medicine.

STOMATITIS.

This is an inflammation of the mucous membrane of the mouth.

Pathologically there are the following forms: Catarrhal, ulcerative, croupous, vesicular, pustular.

From a clinical point of view there are only three forms of importance.

1 — Catarrhal.
2 — Vesicular, (sometimes called aphtha).
3 — Ulcerative, (mostly in dogs).

Causes:—

Anything irritating the mucous membrane sufficiently to cause it to become inflamed.

Catarrhal Stomatitis.

Aetiology:—(Causes).

1 — Traumatisms, (rough teeth, bruising while dressing, severe bits).
2 — Foreign bodies, especially those lodging between the teeth.
3 — Rough foods.
4 — Chemicals, (acids, alkalies or various drugs; as calomel aconite, hellebore, chloral pills, licking blisters, etc.)
5 — Thermic causes, such as hot drenches.

6 — Caterpillars, (from bedding with leaves in the fall).

7 — Fungi, moulds, smuts, rusts on grain and ergotism.

8 — Secondary to gastro-intestinal diseases.

Symptoms:—(First stage).

1 — Anorexia. (Loss of appetite).

2 — *Mouth shy.* The animal objects to an examination of the mouth.

3 — The mucous membrane is dry and congested, (lampas). Lampas in growing horses is due to shedding and replacing of the temporary teeth by permanent teeth.

4 — The tongue is coated. There is a proliferation of the epithelium causing a catarrhal exudation, which is not readily removed by mechanical means.

5 — There is a lack of saliva in mouth. The mouth is dry.

6 — The odor of the mouth is sweetish, (bad breath).

7 — Slobbering. (Ptyalism).

Second stage:—

8 — Symptoms not so pronounced and mouth is unduly moist.

9 — There are local lesions, (shallow, catarrhal erosions on the inner surface of the lips, bars and frenum of the tongue).

Prognosis:—

As a rule the prognosis is good in catarrhal stomatitis. In most cases it is good, depending, of course, upon the cause.

Treatment:—

1 — Wash out mouth with some antiseptic wash. Creolin one per cent, safest and best.
2 — A saturated solution of salt and vinegar.
3 — Alum, two per cent solution.
4 — Tannin, one per cent solution.
5 — Keep a bucket of water before the horse constantly, to this add one tablespoonful of borax or potassium chlorate.

Mycotic Stomatitis.

(Also called vesicular stomatitis.)

This in an inflammation of the mucous membrane of the mouth due to fungi. In this disease there is formed upon the mucous membrane of the mouth of cattle, blisters or vesicles. These usually heal without any trouble, but sometimes form ulcers, leaving a scar forming a cicatrix or pit.

Occurrence:—

This occurs quite commonly in the U. S., especially in the Southwest and Texas. It is usually seen during or after a period of drought when rains begin to come. It frequently visits only one neighborhood during the season, and appearing in another section of the country or re-appearing in the same locality the next season. This somewhat resembles foot and mouth disease of cattle. This disease is neither infectious or contagious, but sporadic, while "foot and mouth" disease is very contagious. Cattle kept on grass are the only ones affected. It is very rarely seen in stable cattle. Mycotic stomatitis also involves the feet.

Causes:—

The cause is not exactly known. It is supposed that

the animal eats certain fungi growing on crops, such as clover and rape. The fungus of rape if placed in the mouth of healthy cattle, will cause similar symptoms to those of mycotic stomatitis. It seems that more than one kind of fungus will cause these symptoms.

Symptoms:—(General).

The symptoms are those of stomatitis and lameness. It affects the muzzle, skin of the neck and the udder.

1 — Stomatitis.
2 — Sore feet.
3 — Skin eruptions.

Symptoms:—(Proper).

1 — Anorexia.
2 — The mouth is inflamed in the earlier stages, (hot, red and painful).
3 — On the mucous membrane, gums, dental pad and under the tongue, well marked vesicles appear. These vesicles coalesce and erode, forming ulcers, about the size of a twenty-five cent piece. Occasionally by coalescence large ulcers occur, (as large as a dollar).
4 — Sometimes these ulcers occur on the tongue.
5 — These ulcers are surrounded by a line of demarcation, and are of a brownish color. The mucous membrane of this region is hard, dry, cracks open and becomes covered with scabs.
6 — Bad breath, extremely offensive.
7 — There is slobbering, foamy saliva, cattle smack the lips and saliva flows from the mouth.
8 — There is swelling and pain in the region of the pastern, at times the fore-feet, and again the hind feet. At times all four feet. It rarely extends higher than the carpus and tar-

sus. The skin around the coronet is fissured. Between the feet there are cracks, which become affected, and as a result pus flows. These resemble a subcoronary phlegmon. It is hard to make animals rise and they are very lame. The skin has eruptions and cracks filled with serum forming a brown scab.

9 — The animal rapidly loses flesh and becomes emaciated.

10 — An increase in temperature to about 2°.

10 — Acceleration of pulse, 20 to 30 beats per minute.

12 — The faeces are thin and the excrements have a fœtid odor.

Prognosis:—

The prognosis is usually good, mild cases completely recover in a week, in severe cases the death rate is one-half to one per cent. Those dying usually die from complications. The animal gets down, cannot eat and is covered with decubital ulcers.

Differential Diagnosis:—

This may be confused with ergotism or true foot and mouth disease.

Treatment:—

Take all cattle from the the pasture and put in the barn. Feed gruel or bran, all they will eat, and keep a pail of water before the animal constantly. Put in this water one tablespoonful of chlorate of potash or borax. If cattle can be handled, wash out mouth with one per-cent solution of creolin. Where there is a large number of animals mix thoroughly two teaspoonfuls of carbolic acid in each bran mash, to be fed every morning. Also feed medicated salt. Take ten quarts of common salt, pour over it eight ounces of crude carbolic acid and mix

thoroughly. Feet should be treated with a creolin or carbolic acid solution.

SLOBBERING.—Ptyalism.

Ptyalism does not mean anything specific. It is not a disease but simply a symptom. It is not due to any one cause.

Causes:—

1 — Primary.
- (1) Stomatitis. (bit, bad teeth, etc.)
- (2) Sharp teeth (large percent.)
- (3) Foreign bodies in the mouth.
- (4) Clover like forage, probably bearing fungi.

2 — Secondary.
- (1) Pharyngitis.
- (2) Rabies.
- (3) Tetanus.
- (4) Milk fever. (cows).
- (5) Poison.
- (6) Drugs.
  - a — Pilocarpine.
  - b — Arecoline.
  - c — Mercury, especially in cattle (mercurialism.)
- d — Iodine (Iodism).

Treatment:—

If primary give ½ oz. Burdock; if not, remove the cause.

Idiopathic:—

This form occurs without any known cause. It is usually seen in dairy cattle as a result of necrosis from resting the head on foot board of the stanchion.

Parotitis.

Parotitis is an inflammation of the parotid salivary gland and is seldom found in the horse. It is identical with mumps in dogs and cats.

Aetiology: — Primary Causes:

This disease may be traced to several causes, such as:

1 — Traumatic parotitis, due to an injury.

2 — Primary idiopathic parotitis. This is supposed to be due to a specific infection.

Secondary Causes:—

1 — Metastatsis.
2 — Pyæmia.
3 — Septicaemia.
4 — Glanders.
5 — Distemper.

Parotitis in cattle is due to actynomycosis fungi gaining entrance to the gland by way of the mouth and steno's duct. The latter is found in cattle as a chronic inflammation of the salivary glands.

Symptoms:—

Clinically we have three forms, and all three forms have some symptoms in common, viz:

1 — Swelling of the parotid gland, which is unilateral or bilateral.
2 — In bilateral parotitis there is but one abscess.
3 — There is stiffness of head and neck.
4 — The head is held poked out. this makes the act of deglutition very hard.
5 — The temperature is elevated from 1 to 2°.

Course:

The course is about ten days.

Differential Diagnosis:

1 — Lymphatic abscess formation in the maxillary glands.
2 — This disease may be diagnosed as pharyngitis.

Treatment:

1 — Camphorated oil or antiphlogistine, externally.
2 — Spirits of camphor or ammonia liniment externally.
3 — Internally,

R

Normal tincture phytolacca M 5
Normal tincture aconite M 2

M Sig: — Every two hours in a little water.

4 — Feed nothing but soft feed, bran mashes, etc.
5 — Keep clean fresh water in front of the animal constantly.
6 — If the animal becomes weakened give artificial stimulation, as strychnine, whiskey, alcohol, ether, etc.

PHARYNGITIS.

(Sore Throat.)

Pharyngitis very rarely occurs alone.

Most of the cases in practice are "Laryngo pharyngitis" or "Pharyngo-laryngitis". In the latter symptoms of pharyngitis predominate and in the former mainly symptoms of cough. This inflammation spreads by continuity, and it very seldom happens that one part is affected without the other. It may also involve the tonsils, the palate, the nasal passages, and the upper portion of wind pipe. The gut-

tural pouches are very rarely affected. Pharyngitis always is accompanied with more or less symptoms of stomatitis.

Causes:

According to the cause there are the following forms:

1 — Sporadic, non-infectious.

2 — Infectious, this is secondary to some other disease.

Causes of Sporadic:

1 — Traumatisms.

2 — Thermic.

3 — Chemical.

4 — The so-called catching cold. (catarrhal) This occurs mostly in horses having extraordinary care and then exposed. Sudden changes of temperature are very inducive to catarrhal diseases. The inflammation may spread from the mouth, the nose and the larynx to the pharynx.

5 — From a spreading of the catarrh from other parts. The above conditions are usually seen in young debilitated horses.

6 — This disease may occur as a symptom in rabies, strangles, influenza, purpura, glanders, chest plague, of horses and tuberculosis. Especially strangles and contagious corrhyza.

Symptoms:

1 — Anorexia.

2 — Coughing.

3 — The animal holds head "poked out", nose elevated.

4 — There is a regurgitation of water and liquid-food through the nostrils.

5 — There is pain on pressure over the pharynx.

6 — There is heat and swelling over the pharynx.

7 — Symptoms of ptyalism.
8 — The breath is offensive, but this is not a characteristic symptom.
9 — In sporadic there is a low temperature, while in the other forms the temperature is high, 102 to 105° F.
10 — The pulse is rapid and weak. (cloudy swelling of heart).
11 — Respiration as a rule is not accelerated, but it may run up in complications.

Complications:

Laryngitis and stomatitis are usually associated with pharyngitis. There may be rhinitis, (inflammation of the nasal mucous membrane), a nasal discharge is the most prominent symptom of this disease.

Course:

The course is usually acute, the animal recovering in from one to two weeks. Sometimes, however, it leads to abscess formation in the subparotid lymph glands. This usually speaks for strangles.

Results of the disease:

(Outcome.)

1 — Abscess formation in the retropharyngial lymph glands. (ox.)
2 — Thickening of pharyngeal mucous membrane chronic dyspnoea or roaring.
3 — Paralysis of the throat.
4 — Foreign body pneumonia, (mechanical pneumonia).

Differential Diagnosis:

1 — Foreign bodies.
2 — Tumors, occasionally polypi-form in pharynx. Actinomycomas.

3 — Parotitis, (mumps) stomatitis, glositis, ordinary ptyalism.

4 — Strangles, (ushered in by high temperature, 105 to 107° F.

Prognosis:

The prognosis is usually good. In acute cases it is favorable, in severe cases less favorable. Very often complications leave the animal in a worthless condition.

Treatment:

1 — Good care and cleanliness.

2 — Antiphlogistine, stimulating liniments and blisters externally. Blister with

R

Pulverized cantharides	oz. 1
Pulverized euphorbia	oz. 1
Vaseline or lard	oz. 8

Heat four to five hours in water bath.

Sig.: — Apply freely and rub in well.

Stimulating liniment:

3 — In the beginning of the disease one-half oz. fluid extract of digitalis may be given. Do not repeat.

4 — In weakness give stimulants, use artificial stimulation.

a) Strychnine, one grain three times daily.

b) Alcohol, oz. 2, well diluted every three to four hours.

c) Aromatic spirits of ammonia oz. 2, well diluted every three to four hours.

5 — Feed bran mashes and soft food.

6 — To regulate the bowels give one tablespoonful of magnesium sulphate on each feed, or one drachm of calomel once daily.

7 — In severe cases when breathing is interferred with, it is always best to perform tracheotomy, as this relieves the animal and it does not become nervous.

8 — Keep bucket of water before the horse at all times, which should contain one tablespoonful of borax or potassium chlorate.

GASTRITIS.

This is an inflammation of the stomach. *Enteritis* is an inflammation of the bowels. As a rule in the horse there is always a gastro-enteritis. Gastritis practically never occurs alone in the horse.

Gastro-enteritis.

There are the following forms of gastro-enteritis:

1 — Simple, usually sporadic. This is usually due to some irritation of the mucous membrane. This form is seen in horses particularly.

2 — Croupous, seen in ox especially. This leads to the formation of croupous membranes on the mucous membranes of the intestine.

3 — Mycotic, this is due to poisons in preserved food, such a forage-poisoning from ensilage or some crop containing a rust, smut or mould. Ptomaine poisoning.

4 — Poisoning due to over doses of drugs or eating poisonous forage. This is termed toxic gastro-enteritis.

The forms of most importance are the simple and mycotic.

Simple Gastro-enteritis.

Simple gastro-enteritis is very frequently seen in horses that are working hard in hot weather, mostly city horses, or horses that are highly fed when in an exhausted condition.

Cause:

The cause is not accurately known. In all probability there is something specific, but at present this is not known. Fermentation is the only known cause. This is due to eating mouldy, fermented or finely ground food. Gastro-enteritis usually follows colic and may be brought on by good food in too large quantities or bad food that is contaminated with bacteria and fungi, or it may be contaminated with foreign bodies.

The food itself may contain some acrid principal. Irritating foods or drugs.

Climatic conditions, (hot weather and too hard work) especially a sudden cooling off of the body.

Partaking of very large quantities of cold water, when the animal is in an overheated or exhausted condition.

To sum up:

Through a previous indigestion, so that the food may not be properly digested, drinking water that is too cold when exhausted. In calves hot milk may produce it. Frozen foods may also produce it. (Paralysis of the bowels).

Symptoms:

The symptoms arise in about six hours or less. This is a very suddenly appearing disease. Ten hours may elapse, but rarely, before the disease manifests itself.

1 — There is abdominal pain, "colic", (cold extremities).

2 — Anorexia, (the animal refuses to eat), stands back from the manger, paws and is restless. Throws head around to the sides of the body, lies down, gets up, walks around in a circle (colicky pains.)

3 — These pains come on at intervals in colic and in gastro-enteritis the pains are constant, no let up to them.

4 — Animals lie down carefully and pains continue.

5 — There is exhaustion or prostration, horse is very weak, exhausted, and holds head down. Eyes set, face pinched, etc. The abdomen is tucked up, the skin loses its vital turgor. The abdomen is tender on palpitation.

6 — There is profuse sweating, the sweat rolls off in drops.

7 — The sensorium is depressed, the animal does not notice anything. The mind is not clear.

8 — The pulse is usually high, hard and stringy, 70-90-100.

9 — The respirations are accelerated and shallow, 20-30.

10 — The temperature is high, 103-105°.

11 — The visible mucous membranes are cyanotic.

12 — Secretions and excretions:

a) In the earlier stages there is constipation.

b) Later on diarrhoea, (violent peristalsis at this period).

Peristalsis all depends upon the case, suppressed as a rule, but in diarrhoea there is an increase in peristalsis.

Gastro-enteritis is a disease, while colic is a symptom.

Course:

After two to six days this disease ends in collapse. Comatose condition and finally death.

Prognosis:

The prognosis is unfavorable, 90% die. This is a very fatal disease. The animals die very suddenly after an attack. These attacks do not last more than forty-eight hours as a rule.

Good signs are seen in pulse and peristalsis. If pulse drops and loses its hard character and peristalsis begins, the patient improves. The two P. P.'s are a very good sign. Those that recover do so only after a very long time. Three months or six months. Very gradually.

Differential Diagnosis:

1 — Colic (intermittent pain). Animal throws itself with some force. The belly is tucked up. Colic does not prostrate the animal to the same degree as gastro-enteritis does, except in flatulent colic.

2 — Poisoning, (only made by the chemist).

3 — Mycotic gastro-enteritis. In mycotic gastro-enteritis there are brain and spinal cord lesions. As a rule this is not confined to one animal. There are symptoms of paralysis, blindness, staggering gait, etc.

4 — Croupous gastro-enteritis is seen mostly in the ox. The symptoms are passing of croupous masses.

5 — Peritonitis. This is usually secondary to castration, bowel perforations. The symptoms are identical with gastro-enteritis.

Post Mortem:

1 — The stomach is diffusely reddened, the mucous membrane is swollen in folds, and there are hemorrhagic spots on the mucous membrane throughout the lumen of the bowel. The surface of the mucous membrane is smooth or covered with a tough, light-colored

bloody mucous. At other times there may be an ulcerous surface throughout.

2 — The bowel is very much the same. The mucous membrane is dark red in color and covered with a yellowish, friable deposit. The lymph follicles are swollen, pyers patches are ulcerated, and the contents of the bowel is usually liquid and stained with blood. The bowel becomes more friable than the stomach. In some cases the mucous membrane is swollen, from one-half to one inch in thickness, being of a jelly like consistency. In the bowels there is a fibrinous exudate. There may be ulcers throughout the intestine, involving all three coats.

Treatment:

In acute cases the treatment is purely symptomatic. Treat the symptoms, keep the animal from suffering too much pain.

1 — Give morphia sulphate, six grains subcutaneously.

2 — Rest for inflamed part. Do not physic.

3 — Chloral hydrate, one ounce.

4 — Cannabis indica, one-half to one ounce.

5 — Opium pulverized, twenty grains.

In cases of exhaustion give alcohol, ounces 2, aromatic spirits, ounces 2, whiskey ounces 2, or strychnine one grain. Fluid extract nux, half ounce.

Sometimes the animal will have a profuse diarrhoea. If this does not weaken the animal, allow it to run on. In cases where it affects the animal, give:

R

Bismuth's subnitrate,	oz. ½
Pulverized capsicum,	drachm 1
Pulverized opium,	drachm 1

M. f. bolus.

Sig.: — Give at once and repeat in two hours if necessary.

R

Tincture Opium,	oz. $2\frac{1}{2}$
Tincture Capsicum,	oz. 1
Tincture Rhubarb,	oz. $\frac{1}{2}$

M. f. solution.

Sig.: — Give one ounce every half hour until relieved.

Tonic:

R

Pulverized nux vomica,
Pulverized gentian,
Pulverized columba, āā

Sig.: — Give one tablespoonful in feed, three times daily.

R

Fluid-extract aloes,	oz. 2
Fluid-extract columba,	oz. 2
Fluid-extract nux vomica,	oz. 2
Fluid-extract gentian,	oz. 2
Aquae, A. D.	O 2

Sig.: — Give one tablespoonful on tongue every four hours.

R

Fluid-extract columba,	oz. 2
Tincture iron chloride,	oz. 1
Water, A. D.	oz. 8

Sig.: — Give tablespoonful on tongue, every four hours.

If animal recovers it is left with great digestive weakness. Give a small quantity of oats, sweet timothy hay and plenty of fresh water. The diet must be very carefully regulated. During the attacks the animal must not have anything to eat. The drugs given must be carefully selected.

Croupous Gastro-enteritis.

Usually seen in the ox and sheep. This disease is sub-acute.

Cause:

The exact cause is unknown, but it is supposed to be caused by eating some irritating body or drug. It is seen to occur in the spring and fall, in animals of a lymphatic nature.

Symptoms:

1 — Indigestion.
2 — Lack of rumination.
3 — Colicky pains.
4 — Anorexia.
5 — Gastric catarrh.
6 — Constipation.
7 — Foetid diarrhoea and the passing of long or short, yellowish croupous masses, (false membranes).

Prognosis:

The prognosis is good in cattle, most of them recover. In other animals the prognosis is unfavorable. The owner takes these croupous masses for worms, or a portion of the bowels.

Treatment:

Simply laxative.

℞

Pulverized nux vomica,	oz. 3
Pulverized aloes,	oz. 1
Pulverized gamboge,	drachms 3
Pulverized tartar emetic,	drachms 3
Pulverized ginger,	drachms 3

Sig.: — One teaspoonful every two hours on tongue until relieved.

Mycotic Gastro-enteritis.

Forage Poisoning.

This is evidently a poisoning from the forage itself. Especially preserved and conserved forages, such as: silage, shredded fodder, oats, millet, corn and mixed hay. Occasionally this forage becomes infected with bacteria or fungi, which when eaten, causes or gives rise to both cerebral and spinal paralysis and gastro-enteritis. This is especially true of the horse. This is quite common in dairying sections from eating silage.

Clinically there are two forms:

1 — Colic symptoms.

2 — Nervous symptoms.

a) Loss of consciousness.

b) Paralysis.

Causes:

1 — Oats, barley, corn or other grain, put away in silos, developing moulds.

2 — Honey dews. This grows upon clover like plants, and produces nothing more than skin diseases. Especially of the unpigmented skin of nose and feet of horses.

3 — Ergot.

History: A number of horses are simultaneously attacked.

Symptoms:

1 — Anorexia, stand back from feed.

2 — Colicky symptoms.

3 — There is foetid diarrhoea, but a stubborn constipation may be present at first. This is a very common symptom.

4 — The mucous membrane is pale, showing that there is a congestion of blood toward the bowels and the internal organs.

5 — Nervous symptoms.
   a) Paralysis of the tongue and the pharynx.
   b) Paraphlegia. The animal is down behind and it is impossible for it to rise.
   3) Loss of consciousness.

6 — The pulse varies from 60 to 100. The pulse may be paralyzed or compressed.

7 — The respirations may be normal, to slightly accelerated.

8 — The temperature is usually up, 102 to 104°.

9 — The visible mucous membranes are pale.

10 — These toxins of the fungi are given off through the kidneys, causing nephritis. Polyuria is a common symptom of mycotic gastro-enteritis, especially from mouldy oats.

This disease is not an inflammation but a poisoning from fungi taken in with the food.

Differential Diagnosis:

1 — Poisoning by drugs.
2 — Poisonous gastro-enteritis.

Prognosis:

The prognosis is usually good. Under proper treatment the animal usually recovers, depending, of course, upon the length of time before treatment.

Treatment:

There is no specific treatment. Remove the contents of the gastro-intestinal tract.

1 — Arecoline, one-half to one grain every six hours until the bowels are evacuated. Eserine may also be used in two grain doses.

2 — Internally give creolin to kill fungi and allay fermentation or calomel one drachm, or sodium salicylate one ounce.

3 — Artificial stimulation.
4 — If nervous or restless give chloral, one oz.; cannabis indica, half oz.

COLIC.

Ninety per cent of all colics are due to indigestion. Colic means a spasmodic pain and contraction of the intestines, especially the colon.

Synonyms:

Belly ache, enteralgia, botts, spasmodic colic, gripes. The word colic is a collective term used for a vast number of conditions of the stomach and bowels. The organs involved are not available for examination. Colic in the horse is much more common than in other animals. This is because a horse cannot vomit.

In practice there are different classes of colics.

1 — True,
2 — False.

In true colic the lesion is in the stomach or bowels or both. In false colic the animals show colicky symptoms, arising from a diseased condition of other abdominal organs.

1 — True.
a) Essential.
1 — A spasmodic or nervous colic.
2 — An indigestious or overfeeding colic.
3 — A fermentatious colic, causing gas accumulation.
4 — Mechanical obstructions to the intestine, such as fecal matter, stones, concrements, impaction of feces, etc.
5 — Twisting and torsion of the bowels. Intus susception and rupture.

b) Symptomatic.
1 — Worms.
2 — Poisons.
3 — Gastro-intestinal catarrh.
4 — Peritonitis. (Wounds and injuries to bowel.)

Colic is the most common internal equine disease. Of all the diseases that the horse suffers 35 to 40% are colics in city practice.

Mortality is about 10% in colics.

Causes: (Predisposing).

A) The horse is the most susceptible animal to colic on account of its peculiar digestive apparatus. The stomach is extremely small and food is not intended to lodge in it. It lies up near the vertebral column and even when full does not reach the floor of the abdomen. The stomach is probably not as important to the horse as to the ox. The gullet is implanted in the stomach, forming a figure of eight sphincter. This prevents vomiting, which wards off colic in other animals. The mesentery covering the intestines is very long and allows or permits considerable movement. This is probably why twists and torsions are so common. The sensory nerve endings in the mesentery of the horse are very well developed, this causes great pain in that region. The nerves in the anterior mesenteric artery form aneurisms, arteritis, etc. Emboli form, which lodge in the smaller vessels of the bowels and block the circulation.

Immediate Causes:

B) The effect of cold weather seems to have some influence in producing colic. Sudden changes in temperature, especially from dry to cold damp weather.

C) Foods and feeding.
1 — Good food only causes colic when injudiciously fed, over-feeding, irregular feeding.

Barley, wheat and rye are dangerous to feed to horses.

2 — Bad foods, such as fungus infested foods, badly cured hay, hay which was sanded, gas producing foods. Fermentation is due to an acrid condition of the stomach.

D) Windsucking may produce colic. This is not very often dangerous.

E) Mecomium or first foetal matter of a colt becomes obstructed and does not pass off. Often washing out the rectum is sufficient. (Castor oil.)

Summary:

1 — a) Stomach is small, oblique gullet, figure of eight sphincters.
b) The great development of sensory nerves ending in the bowel.
c) Presence of strongylus armatus.
2 — Cold and damp weather.
3 — Foods and feeding. Feeding while exhausted.

General Symptoms:

1 — Abdominal pain, switching of the tail, restlessness, pawing, the body is stretched out, the animals lie down and jump up, squat, etc.
2 — Anorexia. (Completely.) Sometimes between the spasms of spasmodic colic the animal will eat a little.
3 — The animal strains as if to urinate. May pass a few drops of highly colored urine at times.
4 — In many cases animal shows rectal straining as if to defecate. This usually speaks for an impaction of the floating colon.
5 — Tympanitis. This usually appears in flatulent or wind colic.

6 — The pulse varies greatly with the intensity of the attack in quantity and quality, but usually is good.

7 — The respirations are hurried in bloating.

8 — The temperature as a rule is normal. This is an unimportant symptom. A rising temperature usually speaks for a complication, such as enteritis.

9 — The visible mucous membranes are usually dry, pale, or bluish, sometimes they may be congested.

10 — Peristalsisis suppressed, from slight to total.

11 — Very little or no feces voided.

12 — Sweating may be noted, this may be profuse. Just prior to a fatal termination there is the cold sweat of collapse. This may run off in streams. Also have loss of vital turgor. The skin normally moves over limbs, but when vital turgor is gone, the skin sticks very tightly to the body.

13 — Eructations and vomiting may be looked on as bloating of the stomach.

14 — Toward the end of the disease there is collapse and great prostration.

Course and Duration:

According to the course there are the following classes of colic:

1 — Acute.

2 — Subacute and chronic.

3 — Habitual.

An acute colic is one that usually does not last longer than ten to twenty hours.

A subacute colic lasts from two to five weeks, usually with a remission of the attacks. There is a paralysis of the colon and the animal usually succumbs in last attack.

A habitual colic is one that appears from time to time in individuals fed rich proteid-containing food. Also when there are stones and concrements present in the lumen of the bowel.

Prognosis:

The prognosis should always be made with care. Any case during its course may terminate fatally from torsion or rupture. If the peristalsis, especially of the right side, is good, we know there is no suppression or paralysis of the bowel.

If the pulse is good and full there is a good chance for recovery. If the pulse and peristalsis are good the case will do good. The pulse may be looked on as the most favorable guide in colic.

Complications:

There are no deaths from plain colic. There are five complications which are usually fatal.

1 — Incarcerated hernia in "stallions".
2 — A twist (torsion volvulus) or invagination, (intussusception) of the bowel, (telescoping).
3 — Rupture of:
    a) Stomach along greater curvature.
    b) Bowel, caecum or colon.
    c) Diaphragm.
4 — Enteritis, (most common).
5 — Pneumonia. Often a foreign body pneumonia.

Ruptures are mostly gastric; generally preceded by vomiting and eructations of a great amount of gas.

Differential Diagnosis:

1 — Haemoglobinuria. (Azoruria.)
2 — Labor pains or signs of abortion.
3 — Impaction of the rectum and floating colon in the last stages of pregnancy.

4 — Retention of urine. A condition omit whereby the urine cannot make its escape, due to stricture, calculi, enlarged glands, etc.
5 — Hyperaesthesia of the urethra in geldings. (Burning in passing of urine.)
6 — Incarcerated hernias in stallions.
7 — Peritonitis, due to castration or a perforation.
8 — Nephritis, hepatitis.
9 — Severe lameness.
10 — Rabies, early stages.
11 — Nervous temperament.
12 — Oestrum. Period of heat in mares.

Death occurs suddenly without any apparent cause from:

1 — Carbon dioxide poisoning.
2 — Auto-intoxication.
3 — Compression of lungs, causing asphyxia.

Diagnosis:

1 — Spasmodic colic of the horse is a condition in which the horse has been well taken care of, usually occurring during cold and damp weather especially, sudden changes. The pain is mild, there are periods of five to fifteen minutes, in which the animal shows no pain. The pain comes on in spasms and is somewhat griping. Spasmodic colic occurs in stables where the animal has been well kept.
2 — Flatulent colic. The abdomen is distended with gas, especially on the right side. The absorption of this gas, causes cyanotic or blue discoloration of the blood. The diaphragm may be pressed forward and the posterior vena cava is compressed, causing labored breathing. Thus most cases die from carbon dioxide poison.

3 — Indigestion or overloading. Always inquire into the history. This is seen mostly in the country and in private families. Without the history it is hard to distinguish this from a subacute impaction. The pains are usually continuous and not in spasms. The abdomen is pear-shaped with the base downward. There may be bloating at any time. As a rule in these cases there is a great suppression of peristalsis. The effect upon the animal is quite severe, there is great prostration, and the body is covered with sweat. This disease usually leads to rupture of stomach or bowel, there is usually some vomiting and the cold sweat of collapse and death.

Treatment:

Treat all cases of colic that need treatment. The only kind not to be treated are the kind that recover in from one to two hours.

What to treat in colic:

1 — Suppression of peristalsis, one of the principal things.
2 — Tympanitis.
3 — Reduction of incarcerations.

The treatment of colic usually depends upon what kind of colic:

1 — Indigestious colic.
2 — Spasmodic colic.
3 — Flatulent colic.

1. Indigestions colic:

I. Indigestions colic.

In these colics the main line of treatment is to evacuate the gastro-intestinal tract. The radical treatment is

passing the stomach tube and allowing great quantities of water to enter the bowel. This will usually soften the mass and flush out the entire gastro-intestinal tract.

Then give some remedial agent to set up peristalsis. If cold water is used there is usually enough irritation to cause considerable peristalsis. Arecoline should be given in half grain doses and repeated frequently. Strychnine or nux vomica may be given in small oft repeated doses.

It is very essential that animals suffering from this disease do not have anything to eat. Keep all food away from them until well, irrespective of the length of time required.

II. Spasmodic Colic.

In this disease the essential treatment is to use some agent that will lessen the pain. Chloral may be given in one ounce doses, cannabis indica in half ounce. Creolin is probably the most effective internal anodyne, it also has marked antiseptic properties. It may be used in the following form:

Creolin,	oz. 4
Oil of turpentine,	oz. 3
Oil of eucalyptus,	oz. 1
Oil of linseed,	oz. 4

Sig.:—Give one tablespoonful on tongue every fifteen minutes.

The most effective treatment for this disease is the stomach tube. Pass the stomach tube (½ inch garden hose) through the left nostril. Pour into the end of the tube two ounces creolin, then allow five to ten gallons of water to pass through the tube, allowing it to remain in the stomach a few minutes, draw off if possible and repeat, allowing this water to remain in gastro-intestinal tract.

III. Flatulent Colic.

As this is due to fermentation antiseptics are the radical treatment. In treating this disease the stomach tube is found essential. It will allow the escape of gas and medicinal agents may be brought into direct contact with the gas producing agents. Use the stomach tube as above directed. Other agents as chloral, one ounce, turpentine two ounces and the trochar. The trochar should be used often, but care should be exercised to have everything sterile and antiseptic.

IV. Incarcerated Hernias.

Many times in stallions these may be removed without a bloody operation. Their duction is affected by taxis and palpation on the rectum. Reach through the rectum and take hold of the incarcerated bowel and pull it back. Put the animal under the influence of chloroform and open the external inguinal ring.

If this operation is postponed, in a few hours necrosis will set in, and a fatal peritonitis follow.

In a case of acute indigestion with diarrhoea give two drachms of calomel. Follow with bismuth, opium, capsicum.

Colic in Cattle.

This is due to bad food, swill, slop, brewery and distillery slop, impaction, hair balls, eating after birth, etc.

Symptoms:

1 — The disease comes on suddenly.

2 — The animal falls, rolls, looks around at sides, bellows, paws, kicks against abdomen, switches, has spasms of pain.

3 — Symptoms last for hours at a time, after which animal appears well.

4 — The animals act like mad, run into things, jump into manger, bawl, etc., (rabiform symptoms).

5 — Loss of rumination, lessening in milk secretion, and toward end general symptoms, hair stands on end and the animal becomes emaciated.

Course:

The course is five to ten days. (Long drawn out process.)

Treatment:

Arecoline one grain every six hours.

R

Powdered nux vómica,	oz. 3
Powdered aloes,	oz. 1
Powdered gamboge,	oz. 3
Powdered tartar emetic,	oz. 3
Powdered ginger,	oz. 3

Sig.: — Give one teaspoonful on tongue every two hours until relieved.

Give Diascorea ½ oz. every hour.

Pass a trochar into flank and flush out rumen with plenty of water, then give something to stimulate peristalsis.

Colic in Swine.

This is due to overfeeding, foreign bodies, worms, etc.

Symptoms:

1 — Restlessness.

2 — Bowing the back.

3 — The animals throw themselves, squeal, lie on the abdomen. Muscular tumors.

Treatment:

1 — Calomel, one drachm doses.
2 — Arecoline, half grain every six hours.
3 — Castor oil, eight ounces, once daily.
4 — Aloin, half drachm, morning and night.

GASTRO-INTESTINAL CATARRH.

1. A catarrah is a mild inflammation of the mucous membrane causing it to become covered with an exudate. Sometimes called acute indigestion, dyspepsia, gastritis, etc.

From a clinical standpoint there are two forms:

1 — Acute.
2 — Chronic.

Cause:

It is usually due to some error in diet. That is food or water.

1 — Food.
  1 — Good food injudiciously given or bad food. Also good or bad water at very irregular intervals, which instead of causing colic, results in an inflammation of the mucous membrane of the intestines.
  2 — Bacteria or fungus infested foods.
  3 — Moulds do not always produce this inflammation.
  4 — New oats and corn that have not gone through a sweat.
  5 — Barn yard water, stagnant pools and creek water.
  6 — Alkaline and dew licks may cause it, and are not fit for horses to drink from.
  7 — Frozen foods, hot foods, etc. (These usually lead to a paralysis.)

2 — The horse himself may be at fault.
   a) The teeth may be rough. Especially at time of shedding the food cannot be prepared for digestion, although it may be good food.
   b) A nervous temperament.
   c) Lack of gastric juice.
   d) Exercise too soon after a meal.
   e) Worms.

3 — Secondary to
   a) Influenza.
   b) Strangles.
   c) Contagious pleuro-pneumonia.
   d) Purpura haemorrhagica.

Acute Gastric Catarrh.

Symptoms:

It is not always possible to differentiate between stomach and bowel troubles. Yawning and loss of appetite usually point to the stomach. Colic and diarrhoea point to intestinal disorders.

1 — The appetite is disturbed, capricious, irregular, may be vitiated, causing animal to eat bedding and drink very little water.

2 — Yawning, this points to the stomach. The animal usually prefers rough food in preference to grain.

3 — Stomatitis, mucous membrane is muddy, saliva is foaming, odor of breath is sweetish, tongue coated, mucous membrane congested, later on ptyalism.

4 — The abdomen is tucked up, feces are passed in small pellets and are covered with slimy mucous, containing much undigested food.

General Symptoms:

5 — The animal is lazy, stupid and does not drive freely.

6 — The pulse is normal.

7 — The respirations are normal.

8 — The temperature is normal.

In most cases there is a gastro-intestinal catarrh.

Acute Gastro-Intestinal Catarrh.

Symptoms:

1 — The appetite is not much affected.

2 — There is diarrhoea present, which causes thirst.

3 — There are colicky symptoms, (pawing, straining).

4 — The feces are soft like cow manure, in cases where diarrhoea does not exist. Frequently coated with mucous, blood, and in rare cases croupous layers. The croupous layers make the owner think of worms.

5 — The odor of the feces is extremely foul, very offensive.

6 — There is a greenish fluid mixed with the excrements.

7 — The tail and external genitals are usually covered with mucous. White fur-like coating in the later stages.

8 — The flatus is very foul.

9 — In the later stages there is profuse diarrhoea, the animal becomes emaciated, weak, urine, is alkaline in reaction and very thick. There are plugs of mucous in canthi of the eyes.

Course and Duration:

Most cases where the animal is young and receives good care, it lasts only from seven to ten days. In bad cases where the diarrhoea persists, animal becomes weak, hide bound, hair stands on end, the horse dies. On post mortem usually find ulcerative enteritis.

Differential Diagnosis:

1 — Gastro-enteritis. Duration shorter, symptoms milder.
2 — Diarrhoea from other cause.

Prognosis:

The prognosis depends upon:
1 — Youth and condition.
2 — Sanitary surroundings.
3 — Care which the animal receives.

Treatment:

1 — Is largely dietetic, good hygiene. Small and repeated feeding of good oats, five times a day, not more than one quart at a feed. Also some nice bright corn fodder or timothy hay. Put water in stall and leave it there constantly.
2 — Drugs are largely secondary.
a) Carlsbad salts, tablespoonful three times daily on feed.
b) Overloading of stomach:
1 — Calomel in drachm doses.
2 — Hydrochloric acid in drachm doses, well diluted every four to five hours.
3 — If there is any fermentation present give creolin or some intestinal antiseptic.
4 — If the appetite is affected give an aromatic tonic.

℞

F. E. Aloes, oz. 2
F. E. Columba, oz. 3
Whiskey or aromatic ammonia, ounces 16

Sig.: — Give 1 tablespoonful on tongue every three hours until appetite improves.

℞

F. E. Columba, oz. 2
Tr. Iron Chloride, oz. 2
Whiskey or alcohol, ounces 16

Sig.: — Give one tablespoonful on tongue every three hours.

℞

Powd. Nux.
" Gentian.
" Charcoal.
" Iron Sulphate. āā

M. f. P.

Sig.: — Give tablespoonful on each feed.

Diarrhoea:

℞

Bismuth subnitrate, oz. 4
Pulv. Capsicum, oz. 1
" Opium, oz. 1

M. f. pulv. no. X.

Sig.: — Give one powder every two hours until relieved.

2 — Rectal Injections:

Starch water, flour water, lime water, colchicum, alum, tannin. Mostly combined. Creolin may also be used. (1 to 2%.)

3 — Artificial Stimulation:

1 — Whiskey.
2 — Alcohol.
3 — Aromatic spirits of ammonia.

Give the above in two-ounce doses every 6 to 8 hours.

Chronic Gastro-enteritis.

(*Chronic intestinal catarrh.*)

The cause of this disease acts persistently but mildly. The result would be an induration or thickening of the mucous membrane, accompanied by an atrophy of the digestive glands. It may come from chronic diseases of the lungs, liver and heart.

Causes:

1 — It very frequently results from the acute. Especially seen in run-down, anaemic, overworked horses and those suffering from worms.
2 — Dietetic mismanagement.
3 — Wind sucking.
4 — Teeth.
5 — Worms.
6 — Diseases of lung, liver and heart, which would lead to a passive hyperaemia of mucous membrane of stomach, bowels or both.

Symptoms:

The animals prefer rough food to grain. This is very marked.

1 — Anorexia, loss of appetite or capricious appetite. The appetite is always one extreme or the other.
2 — Sometimes animals will eat more than they can digest, which leads to an intoxication of the blood and venous congestion of the brain. Then they become dull and stupid, showing symptoms of vertigo or stomach staggers.
3 — The animals may have fainting spells, due to indigestion, and act as though they were demented, the head is up and animals back around and fall down.

4 — There is a tendency to mild colics.

5 — There is a tendency to diarrhoea, alternating with constipation. (This speaks for the intestines.) As a rule this disease persists, and the animal emaciates.

Prognosis:

If comparatively young and the teeth good, along with a long course of dietetics, the prognosis is generally good. If, however, the disease is in the last stages, the prognosis is unfavorable. The animal generally ends up in cachexia and death.

Differential Diagnosis:

1 — Always make a careful examination of the mouth.

2 — Examine heart and lungs for chronic lesions.

RUPTURE OF STOMACH.

Causes:

This may be due to ulceration or the so-called peptic ulcer in calves, very rare in adult cattle. In horses it is usually due to a tremendous bloating or great overfilling with food. This causes a spontaneous rupture, due to the lack of a safety valve. Generally the rent is on the greater curvature. The animals die in a few hours as a result of this disease, but may live four to six days. When they live so long it is usually due to the rent being filled with bowel or omentum.

An indigestions colic comes on before the food can get out of the stomach. This causes frequent eructations of gas through the oesophagus, vomiting usually occurs before a rupture of the stomach.

Symptoms:

1 — A violent attack of colic.
2 — Peristalsis is quiet to dead.
3 — There are symptoms of collapse in which there are no colic symptoms.
4 — The body is covered with cold clammy sweat.
5 — There is tympany and tenderness over the abdomen.
6 — Prior to rupture there is great pain.

Treatment:

The treatment is worthless. Give a hypodermic injection of morphine or something hypodermically to quiet the animal. The main thing is to prevent this condition by the use of a stomach tube during the stage of colic, which always precedes this condition.

INDIGESTION IN CATTLE.

Cattle very rarely have colic. Indigestion refers to the stomach primarily. The stomach is overfilled, cannot move and therefore the contents ferment. This causes either acid or gas to pass out of the food, this in turn causes bloating from gas, or inflammation of the paunch wall from the acid, called catarrh. This results in a stoppage of the peristalsis, causing a fermentation. This mass of food just lies there and ferments or decomposes. This goes over into a gastritis or enteritis.

Indigestion: There are the following forms of indigestion in the ox:

1 — Dyspepsia. (Lack of rumination.)
2 — Acute catarrh. (Acute indigestion.)
3 — Chronic catarrh. (Chronic indigestion.)
4 — Overloading of paunch, impaction of paunch from over-feeding.

5 — Bloating,
   a) Acute.
   b) Chronic.
6 — Traumatic indigestion, due to foreign bodies.

BLOATING.

Acute bloating is a sudden overfilling or distending of the paunch with gas. This is mostly marsh gas. This sudden filling forces the diaphragm forward and encroaches upon the lungs. This does not allow the lungs to act and get rid of the carbon dioxide in the blood. The large blood vessels above the paunch are also interfered with and finally there is an absorption of the gas. All of this leads to carbon dioxide poisoning or asphyxia.

Causes:

1 — Feeding brewers' grain or swill.
2 — Kitchen offals, beets, turnips and potatoes.
3 — Clover like forage, especially when wet with dew, etc.
4 — Swamp grasses.
5 — Bloating is also a symptom of choke.

Symptoms:

1 — A sudden filling of the abdomen with gas. If tapped gives a tympanitic sound. The left flank is greatly distended.
2 — The animal gets weak behind and staggers. The mucous membrane of the mouth is black.
3 — The abdomen is apple shaped.

Treatment:

1 — Pour cold water on the distended flank. Put a bit in the cow's mouth and make her chew it. Pull the tongue out and back, pass a probang, knead the abdomen.
2 — Drugs.

The radical treatment is the trochar and canula and antiseptics internally. Puncture in the middle of the triangle on the left side. Point to the opposite left elbow. Put a wet piece of paper over end of canula, and if paper sticks take canula out. After allowing all of the gas to escape it is well to give creolin, one ounce in a quart of water. Aromatic spirits of ammonia four ounces, in a quart of water or two ounces of turpentine through the canula to stop fermentation and assist in the absorption of the gas.

CHRONIC OR MILD BLOAT.

The animal bloats every once in a while but never enough to require treatment. There is a chronic intermittent bloating usually after meals.

Symptoms:

The symptoms are the same as in acute bloating.

Causes:

Ninety per cent of these cases are due to tuberculosis. There may be other causes, as hair balls, tumors or adhesions of paunch to abdominal wall.

Always make a tuberculin test before administering any treatment for chronic bloating.

Prognosis:

The immediate prognosis is good, as far as the general outcome is concerned it is bad, the animals are generally tubercular.

Treatment:

Give a mild laxative such as aloin in small oft-repeated doses. Follow this with some tonic powder on the feed.

R
Pulverized nux vomica.
Pulverized gentian.
Pulverized columba. āā
Sig.: — Give tablespoonful in feed three times daily.

IMPACTION OF PAUNCH FROM OVER-FEEDING.

This may be due to eating a large amount of condensed food or the animal may have eaten a large amount of indigestible food of a woody or bushy nature. The result is an overloading or impaction of the rumen with a mild bloating. Generally the abdomen is pear shaped. The cow does not ruminate, if she does it is very feebly.

Symptoms:

1 — The animal is languid.
2 — At first bowels are not affected, later on there is constipation.
3 — Absence of milk secretion.
4 — Show symptoms of dumbness, caused by the blood being heavily charged with carbon dioxide going to the brain as such.
5 — Symptoms of vertigo.
6 — Symptoms of actual congestion of the brain. Jump in the manger, push against the manger. (Rabiform.)
7 — The muzzle becomes dry. (Feet are hot and sore. This is not a constant symptom.)
8 — There is some laminitis. Walk on heels and stiff.
9 — The peristalsis is either absent or very feeble. One can actually feel the impacted mass by making finger imprints in the mass, it feels like dough through the wall of the abdomen.
10 — History of the case is of great importance.

Treatment:

Get rid of the contents of the paunch. Give emetics, such as tartar emetic in drachm doses. Tone up the stomach by use of some bitter tonic, such as:

R Nux vomica.
Columba. āā
Sig.: — Give tablespoonful three times daily.

Also take a trochar and puncture rumen and allow four to twelve gallons of water and two ounces of creolin, which has had the chill taken from it, to run into the paunch. Then take a rail and massage the abdomen. This should be followed by some hypodermic cathartic as arecoline in half to one grain doses.

In cases to get relief, where the above will have no effect, perform rumenotomy. Take out about one-half the contents of the rumen and put in as much water as possible to mechanically soften the mass.

INDIGESTION.

1 — Dyspepsia.
2 — Acute catarrh, (indigestion.)
3 — Chronic catarrh.

1 — *Dyspepsia:*

This is sometimes called "loss of cud," weak stomach, suppressed rumination, etc.

Symptoms:

1 — The appetite and thirst are diminished.
2 — There is lack of rumination.
3 — Animal may ruminate, but very slovenly.
4 — Feces are unchanged.

Prognosis:

This lasts for a few days, and if treated the animal usually recovers, if neglected, will go into second stage. Acute catarrh or indigestion.

Treatment:

1 — Remove feed.
2 — Allow the animal to drink water.
3 — One-half ounce hydrochloric acid well diluted with water.
4 — One-quarter ounce of nux vomica three times daily.

ACUTE CATARRH.

This is always preceded by an overloading of the stomach.

Symptoms:

1 — The appetite is gone.
2 — Rumination is intermittent and weak.
3 — Later on total anorexia and total suspension of rumination.
4 — There is always a little thirst present.
5 — The hollow of the flank is mildly bloated.
6 — Paunch movements are rare or absent.
7 — Masses of food can be felt through the paunch wall.
8 — The pulse is somewhat accelerated.
9 — The temperature is normal.
10 — The respiration depends upon amount of food in the paunch.
11 — There is usually constipation, feces are harder and blacker than normal.
12 — The visible mucous membranes are slightly congested to icteric.

Course:

This usually begins in about twenty-four hours after the animal has eaten bad food. In two to three days there is some improvement shown by rumination. Usually recovery takes place in from three to ten days. If recovery does not take place the abomasum is affected; this is followed by gastro-enteritis. In this there is complete constipation, suppressed paunch movement, depression of the sensorium, the visible mucous membranes are discolored bluish, and the pulse is small and thread-like.

Diagnosis:

1 — History shows that the animal has been fed a quantity of indigestible food.

2 — This must be distinguished from traumatic indigestion and traumatic pericarditis.

3 — Chronic indigestion must also be distinguished from this.

5 — It is the most common of all diseases of the ox.

Treatment:

Attempt to start up rumination and movement of the paunch. Give tartar emetic in drachm doses every four hours. In cases of much belching give hydrochloric acid in half-ounce doses, well diluted.

CHRONIC INDIGESTION.

(Paralysis of Rumen.)

The liquid decomposing products from the rumen pass into the true stomach and bowels and there set up by the toxic products a gastro-enteritis. Diseases that effect the foreparts of the gastro-intestinal tract do not affect the true stomach.

Symptoms:

1 — The action of the stomach is suppressed. (No paunch movement.)

2 — The feces are passed in black, hard balls, covered with white slime at very irregular intervals.

3 — May have total constipation for three to four days and then a foetid diarrhoea.

4 — There is foetid belching, the general condition is greatly disturbed. There is a rise in temperature, the warmth is unevenly distributed over the body. There is dullness and weakness until cow is completely emaciated. The animal gets down and cannot get up, grits its teeth, eyes look dull, and there in an anxious look on face.

5 — Later on death results.

The disease may last for several months or may only last a few weeks.

Diagnosis:

History of the case shows the cow has been ill for some time, becoming emaciated, rough hair coat. This is followed by absolute constipation or stinking diarrhoea, later on a tendency to mild bloat. This is generally very easy to diagnose.

Differential Diagnosis:

It is impossible to distinguish in life between a catarrhal and tubercular indigestion. It is also hard to distinguish from a traumatic indigestion.

Treatment:

Follow about the same treatment given for acute indigestion. Especially tartar emetic. Hydrochloric acid is advantageous for belching. If diarrhoea is offensive give

creolin. Barium chloride can be given in one drachm doses. Stimulants may be indicated.

R

Amm. aromatic,	oz. 1
Spiritus nitrosi aetheris,	oz. 1

M. D. S. Give in pint of water every one to four hours.

R

Spiritus frumenti,	oz. 2
Aetheris,	oz. 2

M. D. S. In pint of water every two hours.

Do not let the cow have anything to eat. The most important thing is the return of rumination. Give tonic powders and feed carefully.

TRAUMATIC INDIGESTION.

This is often a forerunner of traumatic pericarditis. Foreign bodies in the reticulum of cattle do not do harm as such, except when they set up a traumatic inflammation by being sharp on one end. This sharp end goes forward and ulcerates its way through the stomach wall, causing peritonitis, and adhesions of the stomach and diaphragm.

1 — Sometimes it causes abscess in diaphragm.

2 — Occasionally it passes to the right of the liver, resulting in abscess of the liver.

3 — It may pass out below, a little to the left of the median line, behind the sternum, as a so-called cold abscess.

4 — It may form an abscess in adjacent organs, abscess in the lungs, or an abscess in the heart.

These foreign bodies always cause adhesive peritonitis by passing out of the reticulum.

Symptoms:

The symptoms are not characteristic enough to go any further than suspecting it.

1 — Generally have an acute indigestion, which is only temporary and improved by treatment.
2 — There is an intermittent temperature from pyaemia, caused by the abscess.
3 — The indigestion is recurring. (Comes on every three or four weeks.)
4 — The animals frequently show pain, which manifests itself by groaning, moaning, gnashing of teeth.
5 — There is stiffness in the gait, especially when the diaphragm is involved.
6 — Frequently symptoms of peritonitis are seen.
7 — Presence of irregular pulse; in most cases there will develop well-marked heart symptoms with a subsequent dropsy.

Treatment:

As a rule the same treatment is used as in indigestion, because we are not certain of what we have until after a post mortem.

FORAGE POISONING OF CATTLE.

Forage poisoning of cattle is due to the eating of growing foods, such as sweet corn, green apples, etc. There is always an overfeeding or a paunch containing green fodder. Also by second growth of Kaffir corn. It is thought by chemists that prussic acid is present in large amounts, this being the cause of very sudden death.

Symptoms:

1 — Symptoms of an acute indigestion, with violent diarrhoea, which is watery in character.

2 — There is complete loss of consciousness and paralysis.

3 — The milk flow is suppressed, animals do not ruminate: later on the cow is down, unable to rise, and perfectly unconscious. A case of this kind looks like milk fever.

Treatment:

1 — Stimulants.

2 — Creolin infusions into rumen to allay fermentation.

3 — Inflate udder with air as in milk fever.

DISEASES OF CIRCULATORY APPARATUS.

TRAUMATIC PERICARDITIS OR HEART DISEASE.

This is caused by sharpened foreign bodies gaining entrance into the heart or the heart sack. According to the position of the foreign body, there may be epi, peri, myo or endo carditis. All of these may be present at the same time. As a rule a chronic pericarditis is the most important and occurs most commonly. The foreign body may go to the lung and lead to a traumatic pneumonia, or an abscess in the pleura.

Clinically divided into four forms:

1 — Chronic sero-fibrinous pericarditis. In this there is a fibrinous exudate on a serous membrane.

2 — A partial or total adhesion of the pericardium and epicardium. Little or no serum being present. This is really a fibrinous pericarditis.

3 — Traumatic abscesses in the heart.

4 — Wounding of a heart's cavity or an artery.

Symptoms:

1 — Those of indigestion, suffered from time to time in the last months from attacks of indigestion. In these attacks the animal seems stiff.

2 — The pulse is irregular, and there is stiffness of thorax.

3 — The appetite and rumination are suppressed; there is a tendency to bloat.

4 — The pulse is accelerated and irregular.

5 — The temperature is about normal.

6 — In two or three days bloating disappears, the animal shows difficulty and carefulness in getting down, and holds the body very stiff. Sometimes get up like a horse. The animal lies down and gets up stiffly and with difficulty.

7 — Another important symptom is a venous pulse. The jugular veins are greatly distended and the pulse causes a wave like movement of the vein.

8 — There is oedema under the jaw, down neck, on brisket in later stages of the disease. In most cases the heart is weak.

9 — On auscultation and percussion:

a) Pericardial bruits

b) Tinkling tones.

c) Dullness on percussion.

10 — The animal becomes very dyspnoeic, runs tongue out, and breathes with difficulty.

THUMPS.

As a rule thumps in the horse is due to palpitation of the heart or diaphragmatic spasms.

Both of the above have a common symptom, which is

a spasm-like, rhythmic movement of the thorax. Similar to hiccup.

HEART PALPITATION.

Causes:

1 — Organic heart diseases.
2 — Valvular diseases.
3 — Anaemia.
4 — Atrophy or leucaemia.
5 — These sometimes affect the heart or the blood flowing through it.
6 — Nervous palpitations.
7 — Nervous temperament, over driving, whipping, hanging in halter over night, severe use of the curb bit, etc. Cast in stall, etc.

Symptoms:

1 — A tumultuous beating of heart.
2 — Shaking of the thorax, pounding sound.
3 — The pulse is increased, small and wiry.
4 — The respirations are dyspnoeic and animal shows restlessness.
5 — There is profuse sweating and tumbling.
6 — On auscultation over back or side there may be heard loud thumping beats, which sound like some one pounding.
7 — The characteristic of this kind of thump is, the beats are synchronous with the pulse. (Harmony.)

DIAPHRAGMATIC SPASMS.

Actiology:

This most frequently follows diseases of the digestive tract, as colic, gastro-intestinal catarrhs, copious drinks of water, giving pills. It may come from palpitation of the

heart. It is seen very rarely in cattle. It is seen most commonly in horses, dogs and swine. In swine in hog cholera and indigestion.

Symptoms:

1 — Tumultuous beating or thumping in the left hypo-chondriac region, causing a shaking of whole body.

2 — Respirations are short and jerky.

3 — Electric like shocks are audible and feelable, especially along course of attachment of diaphragm. In some cases singultus will occur. (Hiccup.)

The characteristic differences are in the latter. These thumps are not synchronous with the heart beats. In a few cases there seems to be a combination of the two.

4 — The animal shows some colicky pains, refuses to eat or drink, stretching a leg back or forward, rarely lying down. There may be symptoms of spasmodic colic with these beats.

Duration:

One-half to one to four days, with recovery.

Prognosis:

The prognosis is not so very unfavorable. Thirty-three and one-third per cent. death rate, depending on the cause.

Treatment:

Anti-spasmodics:

Morphia sulphate, 3 to 6 grains, subcutaneously
Potassium bromide, 1 to 2 ounces.
Chloral hydrate, 1 ounce.

Apply ice bags over heart region. Use of liniments and blankets.

In the spring in large, phlegmatic horses that are fat and soft, venous exudum is indicated. (Phlebotomy.)

ACUTE ENDO-CARDITIS.

In this condition the lining membrane of the heart is inflamed. Especially the foldings and valves. It is seen in horses and cattle, and not as rarely as we may think. It is very frequently confused with pulmonary diseases.

Cause:

Some irritant contained in the blood stream.

Aetiology:

This disease is a true pyaemia.

1 — *Horse:* Due to pyaemia.

Pyaemia is seen in contagious pleuro-pneumonia, in pneumonia, founder, strangles and septicaemia.

2 — *Ox:*

Pyaemia occurs after obstetrical operations, parturition, rheumatism, puerperal fever or metritis.

Post Mortem:

In mild cases the free borders of the valves, chords and papillae contain nodules of a whitish grey color, about the size of a hemp seed. By several of these nodules becoming confluent and covered with a layer of fibrin, there is a formation of a cauliflower node, spoken of as a wart-like endo-carditis. These do not permit the valves to close. In some cases the endo-cardium is swollen, turbid and covered with haemorrhagic spots. On the parietal portions there are well-marked ulcers, spoken of as "ulcerative endo-carditis". Accompanying this there is a secondary abscess formation and pyaemia.

Symptoms:

1 — Thumps, tumultuous heart beat.
2 — Very rapid, weak and intermittent pulse.
3 — The heart beat, 160 per minute.

4 — The respiration is 70 per minute. Very dyspnoeic.

5 — There usually is fever accompanying this condition, loss of appetite, thirst and constipation.

6 — The temperature may be from 105 to 106.

7 — The general appearance of the animal is very bad, languid, periodically colicky pains and great weakness.

8 — Heart bruits may be heard.

ENLARGEMENT OF THE HEART.

In this condition the heart has become abnormally greater in size.

Two classes:

1 — Hypertrophy, enlargement with a thickening of its walls.

2 — Dilation, and enlargement of the heart in which there is an enlargement of its cavities. The walls may even be thinner than normal.

1 — Hypertrophy is spoken of as eccentric and concentric. In eccentric the cavities are also enlarged. In concentric the cavities are made smaller.

2 — A partial hypertrophy is where one portion of the heart is hypertrophic.

3 — Diffuse hypertrophy is where the whole heart becomes hypertrophic.

Hypertrophy is usually partial and on the left side of the heart. Dilation usually occurs on the right side. Hypertrophy may reach as high as thirty-nine pounds. The walls may be thicker than normal.

Causes:

1 — Over-exertion in nervous horses.

2 — Anything interfering with circulation of the blood.

a) Arterial stenosis, (anywhere).
b) Thrombi.
c) Valvular disease.
d) Lung thickenings. (Due to disease).
e) Emphysema of lungs, (heavy).
f) Pericarditis.
g) Chronic nephritis.
h) Anaemia.

3 — Any heart disease.

PANTING.

This is due to diseases of the lungs or diseases of the heart.

The most common lung disease which causes this trouble is chronic bronchial catarrh, or some chronic incurable disease. This disease usually occurs in old horses. Sometimes it follows or accompanies bronchiectasis, atelectasis, chronic induration, peri-bronchitis and emphysema. The bronchi are supposed to be in a state of contraction or the lumen is filled up and it is impossible for the animal to breathe.

The commonest diseases of the heart are a compensatory hypertrophy, with a leakage of the valves, dilation or some valvular defect.

Symptoms:

1 — The main symptom is an extremely rapid breathing accompanied with more or less dyspnoea. The breathing may be as rapid as 50 to 60 per minute. In these cases the breathing is always very shallow.

2 — The respirations are always more or less labored and as a rule there is inspiratory as well as expiratory dyspnoea.

3 — This disease is usually accompanied with a cough of various intensity.

4 — The pulse is also very rapid and weak.

Course:

1 — Chronic. It usually grows worse until death ensues.

Treatment:

1 — Arsenic in the following form:

R Arsenious acid.
Potassium Carbonate, āā oz. 2
Water, A. D.
Heat until thoroughly in solution.

Sig.: — Give tablespoonful on each feed.

2 — Heroin, $^1/_{12}$ gr. every three or four hours.

3 — Phlebo tomy.

4 — Strychnine, 1 gr. three times daily.

5 — Large doses of Nux, $\frac{1}{2}$ to 1 oz. of fluid extract.

6 — Give as little water to drink as possible.

DISEASES OF THE APPETITE.

There are two common diseases of the appetite, these are:

1 — Licking disease.

2 — Wool pulling.

Licking disease is a specific disease in which the animal has a very great and irresistible desire to lick all manner of foreign bodies, and in some cases eats them. This occurs mostly among cattle, horses, goats and swine. The disease is chronic and this ingestion of foreign bodies leads to digestive disturbances, cachexia and eventually death.

Causes:

Aetiology.

1 — The most important is the natural desire for some of the salts of minerals which the animal does not receive in the food. It may be due to a change in food or improper food, but this is very hard to prove. One thing is positive, there is an abnormal condition of the body, and certainly this must be accompanied by an abnormal appetite.

2 — In some cases it is due entirely to intestinal disorders, in other cases the animals are healthy, fat, well cared for, but for this, they contract this disease, become cachetic and die.

3 — Chronic dyspepsia, or chronic catarrh are the most common forms. These do not appear in a very severe form. It is hard to recognize by external symptoms. Or there may be some kind of gastro-intestinal infection present.

4 — It may appear as a nervous disease. Some authorities state that it is a disease affecting the nerve endings in the stomach, mouth and bowels. These confer a wrong sensation to the brain causing this depraved appetite.

5 — Forming the habit from seeing other animals do it. This, however, is very doubtful.

6 — Bad stables, poor ventilation, and filth are causative factors.

7 — Irregular feeding and bad care.

Occurrence:

1 — This disease appears sporadic and enzootic.

2 — In some localities it is stationary.

3 — In some places it is impossible to raise calves as a result of this disease.

4 — It appears mostly in well bred cattle and es-

pecially in heavy milk cows. Oxen are seldom affected.

5 — This disease frequently occurs during the sucking period of calves.

6 — Feed does not seem to alter this condition any.

Symptoms:

1 — No temperature in first stages.

2 — Temperature in second stage.

3 — The appetite is either slightly depressed or animal will eat slowly.

4 — Rumination slow, eventually suspended.

5 — Appetite alternating, finally none.

6 — If the animals have good food, they will eat the bedding, or if in the open they will eat young trees or grass.

7 — If dairy or confined cattle they have a mania for licking the clothing of attendants, walls of stalls, try to eat feces, or anything that is abnormal.

8 — Later on nervous symptoms appear, the animal is easily scared and is flighty.

9 — The milk secretion is lessened.

10 — The faeces are very dry and hard, they may be covered with mucous.

11 — Urination suppressed.

12 — The temperature at this stage is elevated.

13 — The pulse is small and weak.

14 — There are general symptoms as falling off in flesh, the mucous membrane is pale, the hair is lusterless and the skin becomes lifeless and is dead.

15 — The animal dies of inanition.

Course:

The course of this disease is always chronic, it may extend over several months. A change of feed, location and

of stable may hasten recovery. As a rule this disease lasts from one to three months.

Prognosis:

1 — If there is general emaciation and marasmus with secondary digestive disturbance, the prognosis is unfavorable.

2 — If the animal has a change of feed and the appetite re-appears, and the disease is not too far advanced, the prognosis is favorable.

Treatment:

1 — Prophylaxis.
2 — Change of feed, location and care.
3 — Give animal plenty of salt.
4 — Carlsbad salts on feed.
5 — Apomorphine, (gives best results), half to one grain doses.
6 — Oil of tar or stinking oils on places where animals lick.

LICKING DISEASE IN HORSES.

This disease occurs most commonly among horses. This seems to occur sporadically and the symptoms are very mild. It usually occurs in the form of gastric disturbances and yields to treatment very readily.

Symptoms:

1 — Licking and chewing foreign bodies.
2 — Sometimes the animal will lick its own body or skin, eat feces and straw soaked in liquid around stall.
3 — There is constant falling off in flesh and cachexia.
4 — The animals may acquire a special habit such as eating sand, etc.

Treatment:

The treatment is the same as for licking disease in cattle.

EATING THE AFTER-BIRTH.

This disease occurs most frequently in cows or sows. It seems to be a disturbance of the brain, causing this innate desire or depravation. It may be a digestive disturbance in some cases.

Treatment:

1 — Calomel in one drachm doses.
2 — Tartar emetic in one drachm doses.

WOOL PULLING OF SHEEP.

Wool pulling or wool eating is very similar to licking disease of cattle. Some sheep contract the disease by mimicking. This seems to be the one most important cause. It usually starts with one sheep, then the rest follow and soon the entire herd is affected. If contracted by habit from some other animal it may be isolated and soon this habit will leave.

It also appears as a disease of malnutrition and one in which there seems to be something lacking in the food. It is often seen where too much starchy food is fed and the ration is not properly balanced.

Occurrence:

1 — This disease occurs mostly in Merinos of middle age.
2 — It is seen mostly when sheep are housed in the winter and fall months.
3 — It will appear in from eight to fourteen days after sheep are put in for the winter.

Symptoms:

1 — In lambs this comes on in from two to four weeks.

2 — They begin to pull the wool off from the mother around the udder and the belly.

3 — This does not seem to affect the appetite and lambs grow and do well.

4 — Yearlings begin by pulling the wool of others as though it were hunting for food.

5 — There does not seem to be any general symptoms accompanying this disease as the sheep stay well and the appetite is good.

Prognosis:

The prognosis is favorable.

Treatment:

1 — Apomorphine, half to one grain.

2 — Salt.

3 — Stomachics, and tonics.

4 — Alkaline agents and salts.

ACUTE NASAL CATARRH.

(*Corhyza, "cold in head".*)

Causes:

1 — Primary. The so-called catching cold, (in fall and spring). Sluggish animals are especially predisposed to this disease. There may also be an irritation with a direct or indirect injury to the lower part of nasal mucous membrane. Irritating substances may also be inhaled, such as smoke, bacteria, pollen, or the entrance of pus cocci into the nostril.

2 — Secondary. It may appear as a symptom of some other disease or it may accompany in-

fectious diseases of the respiratory tract, or it may come on from a catarrhal condition of the pharynx or larynx.

Symptoms:

1 — There is hyperaemia of nasal mucous membrane, (reddened).
2 — There is congestion and dryness of the nasal mucous membrane.
3 — The experium is a little warmer than normal.
4 — The main symptom is a nasal discharge, this may be serous, mucous, or mucilaginous. In mild cases this discharge is of a watery consistency, (serous).
5 — The animal sneezes and as a rule the nostrils are covered with crusts.
6 — The submaxillary lymph glands are slightly swollen.
7 — This is a feverless disease.

Course:

The course of this disease is from eight to fourteen days. This disease is not accompanied with general symptoms and when it is the course is longer. If the inflammation affects the tear duct the eyes become involved. Symptoms of conjunctivitis.

Prognosis:

The prognosis is always good.

Treatment:

1 — Treat the owner, let the animal alone. Give Carlsbad salts, bran mashes, and gentle exercise.
2 — Let the owner steam the animal.
3 — Give nux vomica or gentian.
4 — Nature will bring about good results if left alone.

CHRONIC NASAL CATARRH OF THE HORSE.

Forms:

1 — Primary chronic.
2 — Secondary chronic.

Causes:

If the acute inflammation spreads to adjoining parts, involving the turbinated bones and the sinuses or posterior nares they may be a chronic catarrh set up.

Chronic nasal catarrh may also be caused by freezing the mucous membranes.

The secondary form is the most important.

In this disease the discharge may be unilateral or bilateral. Glanders is the most important cause. It quite often happens that the discharge assumes the nature of a chronic nasal discharge.

Differential Diagnosis:

1 — In glanders there is no odor attached to the discharge. It is oily, sticky and clear.
2 — Empyaemia of the sinuses. This can be diagnosed by percussion.
3 — Ulceration of the mucous membrane of the nasal chambers. This is due to parasites.
4 — Necrosis of the nasal mucous membrane.
5 — Foreign bodies in the air passages.
6 — Chronic diseases of the respiratory tract.
7 — Chronic constitutional diseases, such as anaemia and leucaemia.

Symptoms:

1 — The nasal mucous membrane is pale and cyanotic.
2 — When the disease is long drawn out there is a thickening of the mucous membrane and small ulcers are very prominent.

3 — The nasal discharge has a glossy, shiny appearance. This may be mucous or resemble pus. The diseased nostril is covered with a brown scab.

4 — There is a lack of pigment on the upper lip where the nasal discharge has passed over.

5 — When the animal has its head in a lowered position, there is a copious discharge.

6 — A unilateral discharge should be looked upon as quite a serious symptom, indicating glanders, tumors, foreign bodies, or necrotic lesions of a tooth. Empyaemia of the sinuses.

7 — There is swelling and induration of the submaxillary glands, (cold and painless).

8 — If the diseased process is long drawn out, it may lead to ulceration. These must not be mistaken for glander scars.

Course:

The course is weeks, months and even years.

Treatment:

1 — Steaming with tar and turpentine.

2 — Tonics, internally.

a) Fowler's solution.

b) Donovin's solution.

c) Nux vomica.

3 — Astringent lotions, injected high up into nasal cavity.

a) Bichloride and alcohol. 1 :5.

b) Alum, tannin, zinc sulphate.

NASAL CATARRH IN SHEEP.

Also known as:

1 — Glanders.

2 — Malignant catarrhal fever.

There are two kinds:

1 — Simple acute.
2 — Simple chronic.

Nasal catarrh in sheep is so rare that it is very seldom mentioned. It occurs most commonly in spring or fall after shearing.

Symptoms:

1 — Nasal discharge.
2 — Sneezing.
3 — The respirations sound like wheezing.

CHRONIC NASAL CATARRH.

This comes from the acute form in young or emaciated animals. In this form the prognosis is not always favorable.

Symptoms:

1 — A muco-purulent nasal discharge.
2 — The nostrils are blocked with crusts, which may cause suffocation.
3 — The appetite and general condition of the animal are rarely affected.

RHINITIS.

Rhinitis is an intense inflammation of the mucous glands and subcutaneous glands around the nostrils.

Kinds of Rhinitis:

1 — Follicular.
2 — Croupous.
3 — Diphtheritic.

Follicular rhinitis occurs in epizootic form and is supposed to be a contagious disease.

Symptoms:

1 — An acute nasal catarrh.
2 — The mucous membrane on the septum nasi is markedly inflamed.
3 — The surface of the mucous membrane and skin becomes very rough.
4 — The swollen glands terminate by the formation of nodules, which break and leave ulcers. The ulcers heal without a scar.

The result is a thickening of the lymphatics.

Course:

The course is two weeks.

Prognosis:

The prognosis is favorable.

Treatment:

1 — Such ointments as camphor, iodoform and creolin.
2 — Steaming.
3 — The ulcers may be touched up with a silver nitrate stick.

EPISTAXIS.

Epistaxis is a symptom, and not a disease. It occurs in all animals but mainly in the horse.

Causes:

1 — Traumatic injury.
2 — Hyperaemia and inflammation of the nasal mucous membrane.
3 — New growths, ulcers, fibromas, or sarcomas.
4 — Abnormal blood tension, following violent exertion.
5 — General or chronic constitutional diseases. A habitual nosebleed is a symptom of glanders.

Symptoms:

1 — Pure blood oozing from the nose usually from one nostril.

2 — In this disease the blood comes from the nostrils in a normal condition, and does not clot until it strikes the ground. In haemorrhage from the nose the blood is normal. In haemorrhage from the lungs the blood is frothy and partly coagulated.

Treatment:

1 — It will quit by itself if let alone.

2 — Use 10% solution of perchloride of iron, inject into nostril.

3 — 3% solution of alum or creoline in the nostril.

4 — In rare cases it may be necessary to plug the nostrils with cotton. In doing this always tie a string to each piece of cotton, so that it may be removed without difficulty.

DISEASES OF THE LARYNX.

There are the following common diseases of the larynx:

1 — Laryngitis.

2 — Oedema of the Glottis.

3 — Hemiphlegia Laryngis — roaring.

These diseases arise primarily or they may come from the inflammation spreading from other parts.

LARYNGITIS.

This is an inflammation of the mucous membrane of the larynx. There are the following kinds from a pathological standpoint:

1 — Catarrhal.
2 — Phlegmonous.
3 — Croupous.
4 — Diphtheritic.
5 — Ulcerative.

According to the cause there are the following kinds:

1 — Traumatic.
2 — Rheumatic.
3 — Infectious.
4 — Tubercular.
5 — Glanderous.
6 — Symptomatic.

According to the course:

1 — Acute.
2 — Chronic.

From a clinical standpoint we have the following common forms:

1 — Acute catarrh of the larynx.
2 — Chronic catarrh of the larynx.
3 — Croupous laryngitis.
4 — Diphtheritic laryngitis.

ACUTE CATARRHAL LARYNGITIS.

Occurrence:

This disease occurs in horses and dogs, but it is more common in the dog than in the horse.

Aetiology:

Primary or sporadic.

1 — The so-called catching cold.
2 — Inhalations of cold air.
3 — Drinking of cold water.
4 — Sudden chilling of the body when hot.

5 — It is seen in the fall and spring in an epidermic form.

6 — Traumatisms and chemicals.

7 — Irritations by foreign bodies on the mucous membrane, as smoke, steam and sulphur fumes.

It is seen secondarily:

1 — As a symptom of some chronic constitutional disease, or a chronic disease of the respiratory tract, as glanders, distemper, contagious pleuro-pneumonia or chest plague.

2 — From an extension of the catarrhal process from neighboring parts.

Symptoms:

1 — The main symptom is cough. This cough is dry and harsh at first, later on it becomes moist. This cough is very painful and short and occurs in fits of coughing *or coughing spells.*

2 — Later on this *cough becomes very moist* and mucous is thrown out with it.

3 — The coughing is increased by feeding, watering, or taking the animal from the barn into the open air or by exciting the animal.

4 — On compressing the larnyx from the outside coughing spells are brought on, by trying this often paroxysms of coughing are brought on.

5 — There is considerable dyspnoea on account of the swelling of the mucous membrane.

6 — When this dyspnoea is pronounced, stenotic tones may be heard, such as roaring, rattling, whistling.

7 — Horse holds the head somewhat elevated.

8 — As a rule there is a spread of the inflammation, causing pharyngitis, bronchitis, rhinitis or acute nasal catarrh.

9 — There is anorexia and difficulty in swallowing, the mucous membrane is congested and dry, nasal discharge and in some cases there is a little fever. A high fever accompanying this disease indicates some infectious disease.

Differential Diagnosis:

1 — Pneumonia.
2 — Bronchitis.
3 — Pharyngitis.
4 — Pleuritis.
5 — Other forms of pharyngitis.

Treatment:

1 — Good nursing and care.
2 — Steaming.
3 — Calomel in feed, give one drachm in bran mash.
4 — Carlsbad salts on food to keep bowels open. Bran mashes and soft feed.
5 — Cough.

R
Ammonium chloride, 2 pounds.
Tartar emetic, ¼ pound.
Water A. D., 1 gallon.
Sig.: — Give one tablespoonful on each feed.

6 — Antiphlogistine or Presnitz pack applied externally over region of larynx.

R
Balsam of Fir 1 oz.
Glycerine,
Whiskey, āā Q. S. A. D., oz. 8.
Sig.: — Give one ounce every four hours in severe coughing.

CHRONIC LARYNEAL CATARRH.

This occurs most commonly in horses and dogs. It comes on in the fall and spring.

Causes:

1 — The so-called catching cold.
2 — It usually remains from acute cases that were not properly treated.
3 — It may result from an infectious disease of the respiratory tract, such as distemper.
4 — There may be an ulceration of the mucous membrane.
5 — There may be a new growth, tumor, sarcoma, etc., in the larynx giving rise to such symptoms.

Pathological changes in the mucous membrane of the larynx.

1 — Mucous membrane becomes thickened, congested and covered with serum.
2 — There are ulcers on the mucous membrane surrounded by chronic induration or thickening.

Symptoms:

1 — The cough is long, dry and harsh.
2 — This cough is accompanied by a peculiar stenotic sound.
3 — Coughing is noticed mostly in the morning, (early).
4 — Coughing may be induced by pressure over larynx, the animal very rarely coughs more than once.

Course:

This is a long drawn out process, lasting months and in some cases years.

Treatment:

1 — Blisters or stimulating liniments externally in region of larynx.

2 — General tonics internally, arsenic in form of Fowler's solution, F. E. Nux and Iron. Columba and Iron.

3 — Injection of Lugol's solution into the larynx directly.

4 — Cough mixtures.

1 — Glyco-Heroin (Smith's) in ½ to 1 oz. doses, every three or four hours.

R

2 — Amm. chloride, oz. 8
Tartaric emetic, oz. ¼
Water A. D., O 2

Sig.: — Give tablespoonful on tongue every three hours.

R

3 — Balsam of fir, oz. 1
Whiskey,
Glycerine, āā A. D. oz. 8

Sig.: — Give one-half ounce on tongue every four hours.

R

4 — F. E. Yerba Santa, oz. 2
F. E. Elecampane, oz. 2
F. E. Squills, oz. 1
Heroin, gr. 60
Glycerine, O. 2
Aqua, āā O. 4
M. f. solution.

Sig.: — Give one ounce every four or five hours.

CROUPOUS LARYNGITIS.

ANGINA OF LARYNX. LARYNX ANGINA.

This disease occurs most commonly in the ox. It may also occur in the horse and dog.

Causes:

1 — The so-called catching cold.
2 — Sudden changes of temperature.
3 — Turning animals out at night that are not accustomed to it.
4 — Traumatisms, (external).
5 — Warm air, steam, hot drenches.
6 — This sometimes appears as an infectious disease in enzootic form.
7 — It may occur as a symptom of an infectious disease, as Petechial fever or acute glanders.

Pathological conditions:

1 — The mucous membrane is covered with croupous layers. These are small at first, later on they become confluent and larger.
2 — The mucous membrane is haemorrhagic, hyperaemic and infiltrated with serum. Sometimes there is an infection and then there is suppuration.

Symptoms:

The symptoms appear very suddenly.

1 — This disease is usually ushered in with a chill, high temperature and general disturbances.
2 — Coughing and severe dyspnoea.
3 — In breathing there is a peculiar opening of the nostrils, (trumpet shaped) opening the mouth stretching of the head.
4 — Severe ptyalism.
5 — The cutaneous veins are filled with blood.

6 — Animals are usually dyspnoeic, there may be whistling, roaring, rattling, snoring or any stenotic sound.

7 — If the symptoms have a tendency to develop rapidly, death may take place by asphyxiation.

8 — After three to five days these false or diphtheritic membranes are coughed out through the nostrils.

9 — There are such general symptoms as constipation, anorexia, and depressed sensorium.

Complications:

1 — Tracheitis.
2 — Bronchitis.
3 — Croupous Pneumonia.
4 — Emphysema.
5 — Oedema.
6 — Foreign Body Pneumonia.

Prognosis:

The prognosis is always grave, and should be made with care. Mortality is about 25%.

Treatment:

1 — Tracheotomy.
2 — Blisters and liniments externally in region of larynx.
3 — Aconite and phytolacca.

R

Phytolacca, (Sp.)	M. 5
Aconite, (Sp.)	M. 2

Sig.: — Give every two hours until relieved.

4 — Antiphlogistine and Presnitz packs externally.
5 — Calomel and Carlsbad's salts on bran mashes.
6 — Steaming.

OEDEMA OF THE GLOTTIS.

This is a sudden oedematous swelling of the submucosa and submucous connective tissues. This may be serous, suppurative or phlegmonous.

Causes:

1 — Intertracheal injections of rapid purgatives or any alcoholic injection intertracheally.
2 — It may occur primarily from the so-called catching cold or from any irritation, such as inhalation of chloroform.
3 — Sudden changes in temperature, etc.
4 — From the spread of an oedema from a neighboring part.
5 — It may appear as a symptom in infectious diseases such as black leg, glanders, purpura, cow pox, pneumonia, or pyaemia.
6 — It is sometimes known to occur in severe cases of pharyngitis.
7 — It may occur as a strangulation from compression of the jugulars.

Pathological Changes:

1 — This usually affects only the upper part of the larynx and vocal chords.
2 — The mucous membrane is in thick, swollen, and oedematous folds.
3 — The mucous membrane is covered over with a slimy exudate.
4 — The posterior part of the pharynx, the base of the tongue and the oesophagus are also affected.

Symptoms:

This disease appears very suddenly. In a very few minutes.

1 — A very high grade dyspnoea, which leads rapidly to death.

2 — Animals show great anxiety.

3 — Stenotic tones are very prominent as a result of dyspnoea.

4 — The animals break out in sweat.

5 — The mucous membrane becomes cyanotic, and the eyes are protruded.

Differential Diagnosis:

Croupous laryngitis.

Treatment:

1 — Tracheotomy as rapidly as possible.

2 — External treatment is only of service after tracheotomy. Blisters and liniments externally.

3 — Bleed animal, (phlebotomy).

ROARING.

This usually consists in a paralysis of the left vocal chord. This eventually leads to an atrophic condition of the ligamentous attachment, with the result that the left arytenoid cartilage hangs in the lumen of the larynx. From this the vocal chord is stretched and at every inspiration the chord is vibrated. The old theory was that the sound was caused by the arytenoid, but recently it has been developed tha it was the vocal chord.

Occurrence:

This disease occurs in young horses as a rule. It comes on mostly between the ages of three and six. Thoroughbreds and halfbreeds are most commonly affected. Mares are practically never affected, but stallions and geldings most commonly. This disease is found all over the

world and not only in certain localities, but may be traced to a certain sire. There is a great deal of heredity about this disease.

Cause:

The specific cause of this disease is unknown. The anatomical construction of the horse seems to predispose to this disease. Horses with long thin necks and a high throat latch seem to be somewhat predisposed to this disease. It is supposed to follow certain infectious diseases, as strangles, contagious pleuro-pneumonia, and influenza are often followed by roaring. It is sometimes seen as a symptom in acute cases of glanders and angina of the larynx. Sometimes seen in various poisonings, such as acute lead poisoning, aconite and various plant poisonings, compression of the recurrent nerve by a tumor, new growth or abscess.

Anatomical Changes:

The muscles of the left arytenoid cartilage become atrophic and pale in color. This can be felt from the outside of the body.

Symptoms:

1 — The main symptom is inspiratory dyspnoea.

2 — This may become so severe that it can be heard, while the animal is standing at rest.

3 — It is usually heard when moving the animal.

4 — This stenotic tone can be anything from rattling to roaring like a bull.

5 — The nostrils are widely dilated and are trumpet shaped.

6 — Mild cases can usually be detected by walking in the stall along side of the horse and giving him a sudden unexpected slap. This will make him roar suddenly.

Differential Diagnosis:

1 — Stenosis of nasal cavity.
2 — Tumors in larynx, trachea, bronchi.
3 — Cysts in nasal cavity.
4 — Chronic induration of the guttural pouches causing thickening.
5 — New formations.

Treatment:

1 — Surgical.
2 — Arsenic and potassium iodide are of doubtful value.
3 — Strychnine in one grain doses hypodermically.

ACUTE BRONCHITIS.

Acute Bronchial Catarrh.

This is an inflammation of the mucous membrane of the bronchi. According to the course, cause, and pathological condition there are the following kinds:

According to the course:

1 — Acute.
2 — Chronic.

Pathologically:

1 — Catarrhal.
2 — Croupous.
3 — Serous.
4 — Mucoid.
5 — Suppurative.
6 — Necrotic.

According to the cause:

1 — Traumatic.
2 — Verminous.

3 — Mycotic.
4 — Infectious.
5 — Glanderous.
6 — Tubercular.

Aetiology:

1 — Certain predisposing causes as young age, weak constitution, poor nutrition, or when kept in too warm barns and then suddenly exposed to colds.
2 — The so-called catching cold.
3 — The inhalation of steam, smoke, dust or foreign bodies, cold damp weather, sudden changeable weather.
4 — This disease is seen mostly in the spring and fall.
5 — Mechanical irritation, such as drenching when the head is too high and horse swallows part of the decoction.
6 — Chemical irritants from the same cause.
7 — Various parasites.
8 — Spread of the inflammation to neighboring parts.
9 — It may be caused by a direct infection. It may also appear in epizootic form.
10 — It may appear as a symptom of an infectious or contagious disease such as distemper, glanders, anthrax or contagious pleuro-pneumonia.

Post Mortem:

1 — Inflammation and ecchymosis of mucous membrane.
2 — A transudation of suppurative or serous secretion on the surface of the mucous membrane.

3 — An infiltration of the mucosa and submucosa.
4 — Sloughing of the mucous membrane as a result of the infection.

Symptoms:

1 — The disease is ushered in with a high fever, 104 to 105°.
2 — The pulse is rapid and weak.
3 — The patient has chills and seems greatly depressed.
4 — Anorexia, and secretions are absent.
5 — The cough. At first this is very painful and dry, later on very loose and pieces of mucous are coughed up.
6 — On auscultation there is a very rough, harsh, vesicular murmur.
7 — Later dry rales, rattling tones may be heard.
8 — This rattling is very characteristic of bronchitis.
9 — Percussion is normal.
10 — Respirations are hurried, but as a rule there is no dyspnoea.

Course:

Four to ten days, with usual recovery, but it may run into the chronic form. The course depends upon age, constitution and care.

Prognosis:

The prognosis is favorable, but should be made with care. May have as a result heaves, chronic bronchitis or may have a spread of inflammation to some neighboring part.

Treatment:

1 — Steaming.
2 — External treatment worthless.
3 — Balsam fir, whiskey and glycerine.

4 — 1 gr. strychnine twice daily.

5 — Sp. Aconite and Bryonia.

R

Aconite (Sp.) M. 2

Bryonia (Sp.) M. 5

Sig.: — Give every two hours until results are obtained.

6 — Carlsbad's Salts and Calomel on feed, feed soft feed.

7 — Blankets and bandages. Bandage legs.

8 — In cases of weakness give artificial stimulation such as camphor, alcohol, coffee, aromatic ammonia or whiskey.

9 — Glyco-Heroin for coughing.

CHRONIC BRONCHIAL CATARRH.

This usually results from the acute. It is usually due to:

1 — Animals with narrow chests and weak constitutions.

2 — Cachetic and young animals.

3 — It may come from the acute form.

4 — Chronic heart and lung disease.

5 — Chronic interstitial pneumonia.

6 — Emphysema of the lungs.

7 — May be a damming up of the blood in the bronchial veins in valvular insufficiency.

8 — Chronic constitutional diseases as, anaemia, leukaemia, and chlorosis.

9 — It may be caused by parasites.

10 — Sluggish and lymphatic horses seem to be predisposed to this disease.

Symptoms:

1 — The main symptom is coughing. This cough is moist and at every cough mucous is expelled.

2 — On auscultation there are dry rales and coarse rattling tones.

3 — This disease is accompanied with more or less dyspnoea, also accompanied with atelectasis and emphysema.

4 — The animals look rough and appear poorly nourished, the animals become weak, cachetic and often a catarrhal pneumonia sets in and they die as a result of this disease.

Bronchiectasis is characterized by a sudden expulsion of masses of mucous which is necrotic. It is usually seen when the animal lowers its head. This is a symptom of chronic catarrh.

Course:

The course is a long drawn out process, lasting weeks, months and even years. This disease usually accompanies laryngitis and heaves, it very rarely appears alone.

Post Mortem:

1 — The bronchial mucous membrane is of a dark brown color. The veins and vessels become greatly enlarged and are very prominent.

2 — The secretion is usually of a mucous nature, but in some cases is necrotic or suppurative.

3 — The secretion often dams up the smaller bronchioles causing atelectasis. As a result of this there is chronic interstitial inflammation of the lungs.

4 — In bronchiectasis the walls of the bronchioles break down, and there is formed a large cylindrical sack, which retains this fluid. In some instances there is formed around this sack a strong membrane and the contents calcify, forming the so-called lung stones.

Treatment:

This disease is curable, but so slow in reacting that the case changes hands often.

1 — Strong inhalations of turpentine, creoline.
2 — Apomorphine.
3 — Ipecacuanha.
4 — Squills.
5 — Intertracheally injections of:

R

Creosote,	M. 10
Alcohol,	M. 10
Water,	M. 5

Give at one dose intertracheally.

BRONCHIAL CROUP.

Croupous Bronchitis.

This in an inflammation of the mucous membrane of the bronchi with the formation of false membranes.

It is usually due to:

1 — The so-called catching cold.
2 — Sudden changes in temperature.
3 — The inhalation of foreign bodies.
4 — Mechanical and chemical irritation.
5 — In the ox this is due to a specific infection.
6 — It may appear as a symptom of an infectious disease.

Symptoms:

1 — These come on very suddenly with general symptoms, exhaustion, weakness, coughing and anorexia.
2 — The symptoms are very severe from the first.
3 — The characteristic symptom is high grade dyspnoea, which usually becomes severe.

4 — On auscultation there may be heard rattling and snoring tones.

5 — The cough in this disease is very painful.

6 — Croupous masses, inches and feet long, are expelled while coughing.

7 — By laying the hand on the trachea, vibrations are felt, (fremitus).

8 — The visible mucous membranes are cyanotic.

Course:

The course is very short. 2 to 3 days with recovery or death due to asphyxia.

Prognosis:

The prognosis is unfavorable. Mortality 25%.

Post Mortem Appearances:

1 — The mucous membrane of the trachea and bronchi is injected, swollen and covered with false membranes, about $\frac{1}{2}$ inch in thickness.

2 — The entire lung is very hyperaemic.

3 — Sometimes these diphtheritic membranes roll together and cause choking with asphyxiation.

Treatment:

In rapid cases treatment is entirely useless. Tracheotomy is also practically useless.

1 — Toxic doses of Nux vomica or strychnine may be of some value.

2 — Artificial stimulation, alcohol, whiskey.

VERMINOUS BRONCHITIS.

Lungworm Disease.

This is an inflammation of the mucous membrane of the bronchi due to parasites.

It is usually due to: Animal parasites, (nematodes or thread worms). These gain entrance to the trachea and bronchi, and cause bronchitis, catarrhal pneumonia, and eventually a parasite phthisis.

The infection takes place by the inhalation of the eggs or the embryo. These then come to maturity and reproduce in the bronchi. By the act of coughing these parasites are coughed up and cast on the ground, and then these parasites lay eggs, which are inhaled by other sheep. This disease occurs mainly in the spring and fall, and usually on wet, low ground and marshes. By some it is thought the infection is taken in through the mouth by food and water, and by regurgitation entering the trachea and bronchi. Some authors seem to think the embryo passed through the blood into the lung. The embryo has never been found in the blood as yet.

Occurrence:

This disease is most prevalent in the fall, especially after wet seasons and in wet years. The infection usually takes place in the spring and the symptoms appear in the early fall. Sometimes it takes two or three months before the disease can be recognized. This disease occurs mostly in sheep and usually in epidemic form.

Anatomical Conditions:

There are the following pathological changes in this disease:

1 — Bronchitis and bronchiectasis.

2 — Lobular catarrhal pneumonia.

3 — Nematode tuberculosis or the so-called pseudo tubercular pneumonia.

I. In the verminous bronchitis there is a suppurative or necrotic inflammation of the bronchial mucous membrane. As a rule the embryos are found encapsulated. The lumen of the trachea and bronchi is filled with a necrotic fluid. The lung tissue in this region is thickened, emphysematous,

oedematous, atelectatic and in some cases the circulation is even destroyed.

II. Lobular pneumonia is found in the tissue surrounding the affected parts. There are small circumscribed, hepaticised portions throughout the lung. After healing these become atelectatic and in some cases the circulation is even destroyed.

III. The pseudo-tubercular pneumonia presents small circumscribed nodules, throughout the lung tissue. These can be felt in the lungs. These encapsulations contain worms that have been surrounded by a fibrous wall. These sometimes lead to a pleuritis with adhesion of the lung to the chest wall. There may also be a peribronchitis which assumes a chronic form.

In all of the body cavities there are quantities of fluid. The general aspect of the body presents hydraemia and anaemia. The lymph glands are usually affected forming hard nodules.

Symptoms:

Sheep.

1 — Present symptoms of chronic bronchitis.
2 — Sheep are most susceptible and the symptoms are most severe.
3 — Symptoms present themselves by a cough, which gradually becomes worse, and eventually becomes weak and very frequent.
4 — This cough becomes worse when the animals are moved.
5 — When coughing, worms, mucous and necrotic material are passed out. Animals frequently rub their noses on the ground to rid themselves of the discharge.
6 — Breathing becomes dyspnoeic.
7 — On auscultation various tones may be heard.
8 — Animals become weak and appetite fails them.

9 — Visible mucous membranes, are exceedingly pale and animals are badly emaciated.

10 — Animals usually die in a few weeks from cachexia.

The mortality depends upon the age, care and food, but usually is about 50%.

Symptoms:

Ox.

1 — Young animals are most frequently affected.

2 — The first noticeable symptom is cough.

3 — Next anorexia and emaciation.

4 — Show symptoms of chronic lung lesions, animals are very dyspnoeic.

Course:

The course is about two weeks.

Mortality:

The mortality is about ten per cent. Depending upon care and treatment.

Symptoms:

Swine.

1 — This disease appears enzootic in swine.

2 — There is dyspnoea and lung symptoms.

3 — This leads one to think of tuberculosis.

4 — The animals usually die as a result of emaciation.

Treatment:

1 — The radical treatment consists of intertracheal injections of aniseptics, and tonics internally.

2 — Inhalations of tar, carbolic acid, creoline, turpentine, chloroform, ether, formalin, etc.

3 — Intertracheal injections of blue stone, creosote and alcohol, chloroform.

Olive oil, oz. 2
Turpentine, oz. 1
Carbolic acid or creosote, oz. 1
Ten drops intertracheally daily.

4 — Lugol's solution. Ten drops intertracheally.
5 — Arsenic.
6 — Bitter tonics.
7 — Gasoline.

R

Olive oil,
Gasoline āā,
Give ten drops intertracheally once daily.

DISEASES OF THE LUNG.

There are the following common diseases of the lung:

1 — Pneumonia.
2 — Hyperaemia, (congestion).
3 — Haemorrhage.
4 — Emphysema.
5 — Asthma.

Clinically there are the following forms of pneumonia:

1 — Croupous, (lobar).
2 — Catarrhal, (lobular).
3 — Foreign Body, (mechanical).
4 — Mycotic.
5 — Interstitial.
6 — Metastatic.

PRIMARY SPORADIC LOBAR PNEUMONIA.

Lobar Pneumonia usually occurs in the horse, while lobular occurs most commonly in cattle.

The known causes are:

1 — The so-called catching cold.

2 — Undue exposure.
3 — Traumatisms.
4 — Irritating inhalations.

Symptoms:

1 — This disease is ushered in with a chill, which is quite long.
2 — In this disease the fever is extremely high, 106 to 107°. This constitutes the diagnostic system.
3 — The fever is even, does not change.
4 — The fever continues for six days when it will suddenly drop.
5 — The pulse is small, rapid and weak, 80 to 100 per minute.
6 — There is muscular weakness, depression of sensorium, and exhaustion.
7 — The animals are very stiff.
8 — Anorexia, (almost total.)
9 — The visible mucous membranes are congested and injected with somewhat of a yellowish or icteric color, (dirty red).
10 — The breathing is rapid, 20 to 60 per minute. The thorax is held very rigid, all the breathing is done with abdominal muscles.
11 — The experium is very hot.
12 — The nostrils are expanded.
13 — There is usually a prune juice nasal discharge.
14 — The cough is short and painful.
15 — On percussion there may be heard tympanitic tones.
16 — On auscultation the sound varies according to the stage.

1st stage, fermitis.
2d stage, bronchial rales.
3d stage, moist rales.
4th stage, rough vesicular murmur.

17 — The urine is very highly colored and of an alkaline reaction, containing albumen. Looks cloudy and is usually scanty in quality.

Anatomical Changes:

Post Mortem.

Croupous pneumonia is characterized by inflammation of the alveoli and respiratory bronchioles, by the formation of a fibrous exudate in the alveoli themselves, which usually attacks the lower lobes. After healing these portions of the lung return to normal.

Stages of lobar pneumonia:

1 — Congestion.
2 — Red hepatization.
3 — Grey hepatization.
4 — Resorption.

I. Congestion:

This stage lasts about two days. In this stage the lung is in a very intense state of hyperaemia, swollen and reddened, pits on pressure, crackles on palpitation, the surface is smooth and shows a solid form on section.

The capillaries are highly injected and there may be small haemorrhagic spots throughout the lung. The lumen of the alveoli is filled with an oedematous fluid. The interstitial connective tissue is infiltrated, oedematous and contains a fine foamy fluid.

II. Stages of red hepatization:

This begins on the third day and lasts about two days. This period usually begins with a coagulation of the fibrous exudate. This fibrin separates into fine particles. The lung becomes very heavy, soggy, sinks, in water, appears swollen and reddened, appears like liver, is dark brown and friable. The cut surface is very grey in color and in some places haemorrhagic. At this stage it ap-

pears marbled, rough and granular to the touch. These granular portions cannot be squeezed out in this stage.

III. Stage of grey hepatization:

In this state the exudate undergoes fatty degeneration and resorption. The white blood corpuscles enter the exudate and phagocytosis takes place. In this stage the granulations are quite soft and on pressure these may be pressed from the lung tissue.

IV. Stage of resorption and healing:

In this stage the exudate liquifies and runs from the alveoli into the bronchi and a portion is expelled in the form of expectoration. After this the lung heals and returns to normal. In the region of the inflammation the surrounding tissue is swollen and in some cases becomes emphysematous.

The pleura in the region of the hepatized spots is rough and swollen and in some instances haemorrhagic. The bronchial mucous membrane is inflamed and swollen and may be covered by croupous layers. The lymph glands are oedematous, swollen and haemorrhagic.

The mucous membrane of the intestines is covered with a catarrhal exudate. The heart, liver and kidneys have undergone fatty degeneration.

Course:

This disease always runs a typical course. The disease does not vary for six days and then is gradually resorbed or the animal dies. The sixth day seems to be the highest point of the disease.

Prognosis:

The prognosis is usually favorable, the mortality being about twenty-five per cent.

Results of pneumonia:

1 — Chronic dyspnoea.
2 — Gangrene of lungs.

3 — Necrosis of lungs.
4 — Bronchiectasis.
5 — Chronic induration of tissue.
6 — Chronic bronchitis.

Differential Diagnosis:

1 — Catarrhal Pneumonia.
2 — Pleurisy.
3 — Chest Plague.
4 — Bronchitis.
5 — Contagious Pleuro-pneumonia.

Treatment:

1 — ½ oz. Digitalis in start, do not repeat.
2 — 1 gr. Strychnine, three times daily, for artificial stimulation.
3 — Smith's Glyco-Heroin for cough in 1 oz. doses every three hours.
4 — Carlsbad's salts on feed. Feed bran mashes and soft feed.
5 — Artificial stimulation, as whiskey, brandy, etc.
6 — Bryonia and aconite, (first stage).

R

Bryonia, (Sp.)	M. 5
Aconite, (Sp.)	M. 2

Sig.: — Give every two hours.

7 — R

Camphor gum,	oz. 1
Creosote, (Beechwood)	oz. ½
Alcohol,	oz. 4

M. f. S.

Sig.: — Give hypodermically ½ oz. three times daily throughout the disease.

8 — Keep horse well blanketed. Bathe the legs in ice water once an hour, then bandage well. The horse must have plenty of fresh air, but do not place the animal in a draft.

BRONCHO PNEUMONIA — CATARRHAL PNEUMONIA.

The most common causes are:

1 — The so-called catching cold.
2 — Inhalation of dust, sand, smoke, foreign bodies.

This disease may occur enzootic in young animals.

Broncho Pneumonia may occur in horses from being tied too short or checked too high for a long period of time, or from transportation, or it may occur after administering an anaesthetic. Broncho Pneumonia may also occur as a result of acute Bronchitis.

This disease occurs most commonly as a result of infectious diseases. Young, emaciated animals seem to be most susceptibe. Tubercular Bronchial Pneumonia is caused by different parasites. (Parasite Pneumonia.)

Symptoms:

The symptoms start just as though it were a case of acute Bronchitis.

1 — The temperature is elevated, 104 to 105°.
2 — The respiration is increased.
3 — There is a short suppressed cough.
4 — On percussion there are tympanitic spots here and there.
5 — On auscultation there are bronchial rales, and in some cases you can hear loud rattling tones.

Course:

The course of this disease is somewhat subacute and chronic, lasting from two weeks to one month, with resulting resorption of the product. This disease may also run into a chronic form. As a result of this disease we may have:

1 — Chronic induration.
2 — Emphysema.
3 — Emaciation. Weakness.
4 — Idiotism.

Prognosis:

The prognosis is very bad in young animals. The mortality is about 75%. In older animals which have care, it is more favorable.

Differential Diagnosis:

1 — Croupous pneumonia.
2 — Bronchitis.
3 — Bronchiolitis.

Pathology: Post Mortem:

This begins with hyperaemia. In some cases these may become confluent, thereby the entire lobe will be affected.

The cut surface in broncho-pneumonia is far more smooth and the granulation is finer. The consistency is lighter. The surrounding tissue undergoes compensatory hyperaemia.

The pleura:

The pleura is rough, swollen, reddened, and the lymph glands are oedematous.

Treatment:

The same as for lobar pneumonia.

MECHANICAL PNEUMONIA.

This is always caused by some mechanical irritation to the trachea or bronchial tubes. It is really a catarrhal lobular pneumonia. There are really two kinds of mechanical pneumonia. These are foreign body and traumatic.

Causes:

1 — Irritating inhalations. Smoke, dust, fumes.
2 — The entrance of mechanical irritants, irritating drenches, etc.
3 — Entrance of oat hulls, timothy heads, splinters, trachea tubes, or bacteria.
4 — This is most commonly caused by drenching a diseased animal as in tetanus, pharyngitis, oesophagitis or a partially narcoticised animal.
5 — It may be caused by one dose of pilo carpine or arecoline or esernic.
6 — Rupturing of a retro pharyngal abscess.
7 — A true mechanical pneumonia is found in the ox. Due to foreign body indigestion, (traumatic.)

Post Mortem:

1 — This disease presents croupous, catarrhal and gangrenous pneumonia present at the same time.
2 — In the beginning the inflammatory process is all in the bronchi, but later on spreads to the lung tissue. As a result of the necrosis the lung tissue becomes dark in color and slimy. The neighboring tissue is haemorrhagic and oedematous.

Symptoms:

1 — Stinking discharge from nose.
2 — Rattling which is very coarse.
3 — Nasal discharge.
4 — Frequent chills and an average fever of 103 to 104°.
5 — Pulse is very weak and small.
6 — The animal is extremely weak and sometimes there is a bloody diarrhoea present.
7 — The history of the case is of importance, it shows that this usually follows colic.

Differential Diagnosis:

1 — Chest Plague.
2 — Bronchitis.
3 — Phthisis.

Prognosis:

1 — Favorable if drench was mild and not too irritating.
2 — It is unfavorable if the substance was irritating.

The mortality depends upon the cause.

Treatment:

R

Creosote,	M. 10
Alcohol,	M. 5
Water,	M. 5

Give intertracheally every 12 hours.

1 — Intertracheal injections of Lugol's solution.
2 — Inhalations of creosote, turpentine, etc.
3 — Artificial stimulation.

MYCOTIC PNEUMONIA.

This is as a rule due to the infection of actino mycosis, Botrycosis, or pus cocci. This disease usually affects more than one animal in the same stable. These bacteria set up an inflammation by the formation of toxines. The resulting pneumonia is very similar to foreign body penumonia.

Post Mortem:

On post mortem the disease usually assumes the form of nodular, gangrenous, or suppurative pneumonia. This consists of an acute, diffuse inflammation throughout the lung tissue. There are hepatized and haemorrhagic spots throughout the lung which are separated by a zone or line

of demarkation. Ulcers form on the bronchial mucous membrane. The pleura in the region of the diseased tissue is inflamed and dry.

Symptoms:

1 — Symptoms of catarrhal pneumonia.
2 — As a rule this assumes the form of a chronic disease.
3 — Dyspnoea.
4 — Emaciation and cachexia.
5 — Animal becomes extremely weak and then dies.

Sometimes the animal will cough up croupous masses which contain particles of pus.

Treatment: — (treat symptoms).

1 — Inhalations of creosote, creoline, turpentine.
2 — Artificial stimulation.
3 — Intertracheal injections.

INTERSTITIAL PNEUMONIA.

This is not a primary disease but is always secondary to some other form as catarrhal croupous pneumonia.

This disease is characterized by the formation of new connective tissues and chronic inflammatory processes in the lungs and between the bronchi. The disease nearly always occurs in the second stage of catarrhal pneumonia, mechanical pneumonia, acute bronchitis, chronic bronchitis and bronchiectasis. Also in the following infectious diseases: Tuberculosis, glanders, actinomycosis, botryomycosis, distemper and chest plague.

Post Mortem:

This disease consists of a diffuse or circumscribed nodular formation of new connective tissues between the individual alveoli.

The lung becomes more firm, and when cutting grates and is rough. In the very first stages this consists of a soft infiltrate, but with age, hardens.

Symptoms:

1 — The main, and in fact the only, symptom is dyspnoea. This is because the lung tissue is destroyed and the oxidizing properties are lost.

2 — Sometimes there is a soft, suppressed cough. But this is not constant.

3 — The animal becomes weak, emaciated, hair stands on end and the skin is dead.

Treatment:

Worthless.

HYPERAEMIA AND OEDEMA.

1 — Active congestion.

2 — Passive congestion.

3 — Oedema.

Causes:

1 — *Active congestion.*

This disease usually occurs in horses after hard work, as racing, running, or over-exertion in extremely hot weather. It may be caused by cold air, smoke, gas, etc. This active congestion presents all the symptoms of the first stage of pneumonia.

2 — *Passive Congestion.*

This follows heart weakness or the failure of the heart beat which will result in a compression of the veins and cause a damming up of the blood in the lungs. This occurs in all diseases that are accompanied by a marked heart's weakness, such as hypostatic pneumonia, infectious diseases, poisonings, and chronic constitutional diseases.

3 — *Oedema.*

This is where the blood serum leaves the vessels and enters the connective tissues between the alveoli and bronchioles. This usually occurs in croupous pneumonia, malignant oedema or in a destruction of the vessel wall from any cause or a damming up of the blood.

Symptoms:

1 — Acute congestion presents all of the symptoms of the first stage of pneumonia and the history of the case must govern the diagnosis. It appears very suddenly and without any premonitory symptoms.

2 — Passive congestion and oedema presents practically the same symptoms. The history will govern the diagnosis.

1 — Appears suddenly.

2 — The temperature is high, 106° to 107°.

3 — Rapid breathing, 80 to 100.

4 — Rapid and weak pulse.

Course:

12 to 24 hours, with recovery or death.

Treatment:

1 — 1 oz. nux vomica every 2 hours.

2 — Strychnine, 1 gr. every 6 hours.

3 — Bandage and bathe the legs in ice water.

4 — Aconite and bryonia in small, oft-repeated doses.

5 — Artificial stimulation.

1 — Whiskey.

2 — Brandy.

3 — Aromatic spirits of ammonia.

4 — Alcohol, etc.

CROUPOUS PNEUMONIA OF THE OX.

The post mortem and pathological condition is identical with that of the horse. In this disease the interlobular spaces very seldom become inflamed. The inflammation is more apt to spread to the pleura. The cut surface of the red hepatization is darker. The pleura is affected more than in the horse.

Symptoms:

The symptoms appear suddenly and usually are sporadic.

1 — There is a high fever, with marked general symptoms.
2 — Dyspnoea.
3 — Coughing.

Course:

This disease runs a more rapid course than it does in the horse. The disease in the ox usually stops in the stage of hepatization the third to fourth day.

Treatment:

The same as for lobular pneumonia.

Pneumonia in swine or sheep practically shows the same symptoms, except that the disease in sheep usually runs a course of 14 days to 3 weeks.

HÆMORRHAGE FROM THE LUNG.

This is caused by:

1 — Over-exertion, especially in hot weather.
2 — Glanderous lesions in lung.
3 — Tubercular processes in the lung.
4 — Contagious pleuro-pneumonia.
5 — Emboli or thrombosis formation in the lungs.
6 — This may occur as a symptom in infectious diseases.

Symptoms:

1 — A reddish, foamy substance comes from the lungs and is passed out of the nose and mouth.
2 — There is severe dyspnoea at the same time.
3 — Coughing.
4 — Chills.
5 — Toward end of haemorrhage animal becomes very weak and nervous. Mucous membrane is pale, pulse small and imperceptible.

Differential Diagnosis:

Epistaxis. Blood comes out as such and is not foamy.

Treatment:

1 — In case it is due to hyperaemic condition of the lungs, phlebotomy is indicated.
2 — Cold applications to external portions of body in region of lung.
3 — Internally, hydrastis, alum, tannin, vinegar and salt.
4 — From a prophylactic standpoint the animal should be kept as quiet as possible and moved only when it is absolutely necessary.

EMPHYSEMA OF LUNGS.

This means some difficulty in breathing.

It may be due to the following causes:

1 — Where there is an adhesion of the lung to thorax and movement is prevented.
2 — Atelectasis.
3 — A change in texture of the lung tissue.

Clinically there are the following forms:

1 — Chronic emphysema.
2 — Acute vesicular emphysema.

1 — *Chronic:*

This is caused by an enlargement of the alveoli and the septi between the alveoli, with a degeneration of the parenchyma of the lung. The alveoli becomes confluent and as a result there are cavities formed in the lung. The more these enlarge the thinner the walls become and they eventually rupture.

The blood supply to these parts is also affected. In the enlargement of the alveoli the capillaries stretch, the lumen becomes lessened and in some cases obliterated.

Microscopically that portion of the lung is greatly enlarged, fluffy and very light in weight. The edges of the lung are rounded, the surface contains the marks of ribs, and it retains finger prints. On opening the thorax the lung does not collapse.

2 — *Interstitial:*

This is caused by a rupture of the alveoli, by too great and forced inhalations. The air enters the connective tissue and the lymph spaces between the alveoli. This is seen in the surface of the lung, under the pleura in the form of blisters, the size of a pea to that of a walnut. These blisters may be easily pressed in or pushed away. The air may also get between the layers of the mediastinal pleura. In rare cases it works out under the skin, causing emphysema.

It is supposed to be brought on by coughing spells, over exertion, over driving, shipping or mechanical pneumonia. It has also been known to follow difficult parturition. The most common cause being acute diseases of the lungs.

3 — *Acute Vesicular.*

This form is an alveolar ectasis, caused by the formation of new tissue. This may affect a single lobule or may be spread over the entire lung. This disease is seen to follow chronic bronchial catarrh.

Symptoms:

1 — Chronic expiratory dyspnoea.
2 — A double motion of the flanks.
3 — At the nostril there are two distinct streams of air at the same expiration.
4 — There is always a secondary hypertrophy of the heart.
5 — The anus is forced out at each expiration.

Prognosis:

The prognosis is unfavorable.

Course:

The course is years.

Treatment: Incurable but may be relieved.

1 — F. E. Rosin weed in ½ to 1 oz. doses.
2 — F. E. lobelia in 1 to 2 drachm doses.
3 — Give 1 teaspoonful of powdered stramonium on each feed.
4 — Strophanthus in 1 drachm doses.

PLEURITIS.

PLEURISY.

This is an inflammation of the pleura.

This process covers an exudative and a productive process of the pleura. There are various forms according to the cause, location, anatomical position and character of the exudate. In this process the lung nearly always becomes adherent to the chest wall, and therefore pathologically we always have a pneumonia present with this disease. This is not the only means whereby we have pleurisy, but the most common. There may be a haemorrhagic pleuritis spread entirely by the blood stream or if there is an infection present there may be pleurisy

present. In certain infectious diseases there may be a bloody exudate in the chest cavity. If the disease has a tendency to run a mild course there may be injected spots and even granulations around this exudate.

A traumatic pleurisy always occurs by means of punctured wounds to the thorax, fractured ribs or traumatisms to the chest wall. These wounds usually become infected and assume a purulent or gangrenous character. As a result we have this form of pleuritis. Sometimes air enters the openings and spreads the infection over a very large surface. If the wound severed a vein or an artery, then we have blood in the cavity; this ferments, decomposes and as a result there is gangrenous pleurisy.

Case where a rib is splintered and a splinter enters the lung, are usually followed by haemorrhage from the nose. It usually requires about one month for the lung to become adherent in cases of fracture.

There are the following forms of pleurisy (clinically):

1 — Primary.
2 — Secondary.
3 — Suppurative.
4 — Gangrenous.
5 — Haemorrhagic.

Symptoms:

1 — A rise in temperature. This may be very high or medium.
2 — Disease is usually ushered in with a chill.
3 — Depression of the sensorium.
4 — Mucous membrane injected and reddened.
5 — Severe dyspnoea. Respirations are frequent and shallow.
6 — The head is held poked out. The thorax is stiff and held out.
7 — If the disease continues the animal becomes greatly emaciated.

Prognosis:

1 — Cases properly treated run a course of 5 to 8 days with a favorable prognosis.

2 — If a very large area is involved and the case has made considerable progress before treatment, the course is usually about two to four weeks and the prognosis is less favorable.

As a rule after fractures or a rupture of the thoracic wall there is a traumatic inflammation with a diffuse suppurative pleuritis with a peracute course. This may also set up a circumscribed fibrinous inflammation or an encapsulation in the fore part of the thoracic cavity. This latter always assumes a chronic form. If the inflammatory process attacks the heart sack or pericardium, the prognosis is necessarily fatal. Most commonly find a secondary or a rheumatic pleurisy. The secondary form is an acute fibrinous pneumonia followed by an exudative pleurisy. Quite frequently a broncho-pneumonia is followed by pleurisy in the region of the hepaticised spots.

Pathology:

1 — Capillary injection and reddening of the pleura.

2 — The epithelium becomes roughened and the lymph glands widen out.

3 — There is an exudation of serum, (white and fibrin.)

4 — If the exudate is fibrinous it is spoken of as "Pleuritis secca". (Dry pleurisy.)

5 — If a great quantity of serum is thrown out "Pleuritis serosa". (Serous pleurisy.)

6 — If serum and fibrin "sero fibrinous".

7 — At this stage a

1 — Local,

2 — Circumscribed,

3 — Diffuse

pleuritis must be distinguished.

The quantity of serum varies with every case and may be from a few quarts to 8 to 10 gallons. Only one pleural sack may be affected or it may spread to the neighboring part. One side may be affected while the other side remains intact. This fibrin coagulates and organizes and in some cases undergoes granulation. If the exudate is haemorrhagic, this blood comes from the strong injection of the pleura and is not pure blood. This sort of exudate has a tendency to become gangrenous.

A suppurative exudate consists mainly of fibrin, serum and pus. The infection enters through a granulation in the inflamed portion of the pleura. This form of exudate very rarely contains fibrin, and if so the fibrin is coagulated and floats around in chunks. The formation of creamy pus in the chest cavity can happen only where there is infection carried in from the outside.

A gangrenous pleuritis is the result of infection and is usually seen to accompany some other disease.

RHEUMATIC PLEURISY.

The exact cause of this disease is unknown. This disease occurs mostly in horses from three to five years old, that have been shipped and unduly exposed on markets or sale stables.

The predisposing causes are horses that chill easily, or where there is some existing catarrhal affection of the respiratory tract. The so-called catching cold and various infections also play an important part in this disease. This form of pleurisy may be one sided or affect both sides. It may be serous or sero-fibrinous according to the character of the exudate. In very severe cases it is usually serous and there may be great quantities of fluid in the cavity. If the disease runs more than twelve to fifteen days this exudate has a tendency to become purulent.

In some localities there is a pleurisy seen, that is caused without exposure and occurs primarily. This is in the form of a stable miasma. The capillaries are highly injected and there is a sero-haemorrhagic fluid thrown out in great quantities. This usually runs above five to ten days, at which time the exudate becomes purulent and assumes a greenish cast.

Symptoms:

1 — In mild cases the symptoms do not develop for four to five days.
2 — In severe cases the disease is ushered in with a chill.
3 — Temperature, 103° to 105°.
4 — The pulse is fast and weak, 80 to 100.
5 — The conjunctiva and mucous membranes are highly injected and reddened.
6 — The first four or five days the animal drinks very little water and the excretion of urine is lessened.
7 — Animal shows great pain on pressure over thorax over diseased portion.
8 — Respirations are dyspnoeic and labored, 30 to 70. In the act of breathing the flanks are used and thorax held stiff.
9 — On auscultation find coarse rattling tones, and in some cases a grating or rubbing sound.
10 — Sometimes in long, drawnout cases there are oedematous swellings in the subcutis under the breast, on the legs, emaciation and symptoms of gastro intestinal catarrh.

Course:

1 — Mild cases run a course of 5 to 9 days, with healing in 14 days.
2 — Severe cases 2 to 3 weeks.

3 — Animals that emaciate and are poorly taken care of, the course is to 4 to 6 weeks.

4 — Cases where both sides are affected the exudate presses on the heart to such an extent that the animal dies early in the course of the disease. This may also lead to suffocation.

5 — Cases in which the exudate assumes a purulent character, are usually followed by a septic intoxication with a resulting gastro-intestinal catarrh, parenchymatous inflammation of the kidneys, liver and spleen. In these cases the patient shows symptoms of diarrhoea, rapid emaciation, eyes stary and venous congestion of mucous membrane.

Prognosis:

Depends entirely upon the intensity of the disease and the way in which the animal stands the attack.

Treatment:

The treatment is mainly symptomatic.

1 — Aconite and Bryonia.

R

Bryonia, (Sp.)	M. 5
Aconite (Sp.)	M. 2

Sig.: — Give every two hours.

2 — Pleurisy root.

3 — Digitalis, give ½ oz. Do not repeat.

4 — Potassium Iodide, ½ to 1 oz. daily.

5 — Good nursing, bandage legs, blankets.

6 — Puncture thorax in cases of hydro-thorax.

7 — Treat other symptoms as they arise.

HYDROTHORAX.

Hydrothorax is a collective term meaning a transudation of serum into the chest cavity. It has practically a reference to a copious exudation.

Clinically we have the following forms:

1 — A sero-fibrinous pleuritis, acute hydrothorax.
2 — A chronic diffuse pleuritis with a serous or sero-fibrinous exudation.
3 — There may be a chronic hydrothorax.

Some horses on account of their great age or on account of malnutrition often suffer from hyperaemia of the lungs, as a result there is a transudation of serum into vessels and pleura and this may lead to a chronic hydrothorax. In cases of chronic deforming endo-carditis or valvular insufficiency, with chronic course, there is seen to occur hydrops, ascitis and anasarca. In this case we have also a transudation in the thoracic cavity and as a result have hydrothorax. Hydrothorax is a symptom and not a disease.

Treatment:

Symptomatic.

1 — Puncture the thorax.
2 — Potassium iodide in half to one ounce doses.

HEMATOTHORAX.

Hematothorax occurs only in horses. It is seen most commonly in complications, such as contagious pleuro-pneumonia, its specific cause being a rupture of the vessels in the pleura. As a result we have haemorrhages in the thoracic cavity. Also seen to occur with a sero-fibrinous pleuritis or pneumonia.

Symptoms:

1 — Sudden paleness of mucous membrane.
2 — Pulse is rapid and weak.
3 — The appetite suddenly fails.

Diagnosis:

Diagnosis of this disease is made only with the trocar.

Prognosis:

The prognosis is unfavorable.

Treatment:

The treatment is expectative. No treatment.

PNEUMOTHORAX.

Pneumothorax is air in the chest cavity. This occurs only in cases where there are penetrating wounds, fracture of the ribs, or an ulceration or destruction of the lung tissue. Perforation. This disease very rarely occurs except by puncture. Has been known to occur in cases of rupture of the bronchial tubes.

Symptoms:

Are very hard to recognize. Sometimes percussion will give tympanic tones. Otherwise practically unable to diagnose.

Treatment:

Keep patient as quiet as possible. Await results.

PYOTHORAX.

(*Empyema of the Chest.*)

This consists of a formation of pus in the chest cavity. A formation of pus never takes place in the chest cavity except by direct inoculation.

Symptoms:

1 — Exceedingly painful inflammation of the Pleura, due partly to pressure and partly to the inflammation which it sets up.
2 — From this there is a resorption and a toxemia.
3 — Severe dyspnoea, seen mostly at expiration. Expiratory dyspnoea.

Treatment:

The treatment is mainly symptomatic.

1 — Aconite and bryonia.

R

Bryonia, (Sp.) M. 5
Aconite, (Sp.) M. 2

Sig.: — Give every two hours.

2 — Pleurisy root.
3 — Digitalis, give half ounce, do not repeat.
4 — Potassium iodide, half to one ounce daily.
5 — Good nursing, bandage legs, blanket.
6 — Puncture thorax in cases of hydrothorax.
7 — Treat other symptoms as they arise.

PARTURIENT PARESIS.

Milk Fever.

This is sometimes known as Parturient Apoplexy or Parturient Fever.

Causes:

This is a mechanical derangement of the blood. This comes on at about the time of calving and as a result we have an apolectic condition of the animal.

Primarily the cause is not known, but the most favorable theory is that at the time of calving there is a great strain on the animal economy. The uterus must have

enough blood to assist in the expulsion of the calf, and the digestive apparatus must also have an over supply on account of the extra strain thrown on it to nourish the young animal. Then the mammary glands call for an excess amount of blood, so that it may secrete enough for the nourishment of the young.

Occurrence:

Milk fever always occurs in *deep* milkers, heavy feeders, in fact the best cows in the barn. Also in cows having a highly developed nervous system.

We also have the following facts:

The nervous system of the digestive tract and mammary gland are in a deranged condition, with a resulting deranged blood supply, and a dilation of the vessels. As a result we have Hyperaemia or Congestion of the Udder. This Hyperaemia causes a resulting Anaemia of the brain and the spinal cord, so that the center of co-ordination and correlation lose control over the body. As a result we have a Paresis or a paralytic condition of the animal.

Symptoms:

This disease usually comes on within three or four days after calving. In rare cases, however, it may come on some time later than the period mentioned.

1 — Anorexia.
2 — Animals become indifferent to their young, and do not notice anything as a rule.
3 — The sensorium is depressed.
4 — Animals have a staggering gait.
5 — Animals lie down and are unable to rise, as they have an ascending paralysis of the hind quarters.
6 — In lying down the head is always turned toward the flank and is held in that position. They may lie on either side.

7 — There is also a paresis of the intestines and the bladder, no urine being voided.

Course:

This disease is always acute.

Prognosis:

Good if treated, if not treated unfavorable.

Mortality:

Untreated, 97%. If treated, less than 1%.

Differential Diagnosis:

Ptomaine poisoning or the eating of growing corn.

Treatment:

1 — The treatment consists of mechanically relieving the congestion of the udder. This is done by inflating the udder with air. This should be sterilized, but prior to this the udder should be disinfected and placed on a clean towel. Precaution should be taken lest the infection enter the gland. The udder should be tightly inflated and the end of the teats tied shut. These strings should be removed in one hour's time.

2 — Internally F. E. Nux Vomica, teaspoonful. Until the animal gets up.

3 — *Do not physic. Do not purge.* Do not give any great quantity of liquid by way of the mouth.

4 — Should the animal remain down for four or five hours catheterize. As a rule the animal gets up in from one to two hours after treatment.

5 — Do not milk the cow for 36 hours.

This is a feverless disease, if anything the temperature is subnormal.

ICTERUS.

Jaundice.

Any disease of the gall duct which causes a damming up of the bile with a resorption is known as jaundice. This really consists of a "hematogenus icterus" and usually appears as a symptom of some other disease. It is seen mostly in septic intoxications of the horse.

A hepatogenus icterus has no relation to a distinct disease of the liver, but refers to some other disease primarily with icterus as a symptom.

A catarrhal icterus is the result of a catarrhal inflammation of the duodenum or the gall duct, causing a damming up of the bile with resorption.

It is quite common that the mucous membrane assumes a yellowish cast, as a result of a fibrile disease. In these cases it is quite rare that the liver itself is affected. Gall stones, abscess, or ulceration may cause this symptom. As yet it has not been proven, whether or not this will cause a parenchymatous inflammation.

Symptoms:

1 — Anorexia.
2 — Dryness of the mucous membrane.
3 — The tongue is coated.
4 — The feces are light colored.
5 — Very little feces is voided.
6 — The visible mucous membranes are very yellow.
7 — The horse is usually very sluggish in action.
8 — The urine is bile stained.
9 — General symptoms are absent.

Course:

The course is ten to twenty days.

Prognosis:

The prognosis is good as a rule.

Differential Diagnosis:

1 — Anaemia.

2 — Disturbances of the digestive tract.

Treatment:

1 — Calomel in drachm doses every six hours.

2 — Arecoline, one-half grain every six hours.

3 — Dietetics, green food, soft food.

4 — Tonics, aloes, nux vomica, arsenic, etc.

5 — Turpentine in one ounce doses every six hours.

HEPATITIS.

This consists in an inflammation of the liver.

A parenchymatous inflammation of the liver, is seen only as a symptom of some infectious or contagious disease. This form of inflammation of the liver never takes place as a primary disease.

A suppurative inflammation of the liver usually occurs in the course of omphalo-phlebitis, (navel ill). The infection takes place directly through the blood stream, the pus cocci entering the liver tissue. There may be abcesses formed in the liver in the course of Pyaemia, the cause being metastasis. Then there may be a necrosis of the liver as a result of thrombus formation with a resulting degeneration of the surrounding tissues.

A multiple necrotic inflammation of the liver, usually follows some intoxicating disease.

DIFFUSE CIRRHOSIS OF THE LIVER.

The cause of cirrhosis is not definitely known. It has been known to follow chronic icterus. Some authorities state that certain foods bring on this condition.

Symptoms:

1 — A variable appetite.
2 — The animals have a dislike for grain, but prefer hay.
3 — Later on in the disease there may be digestive disturbances.
4 — Some animals seem to eat enough but continually lose flesh.
5 — These animals have a tendency to lick foreign objects.
6 — The animals eat dirt, sand, and feces ravenously.
7 — There is constant gapping.
8 — The urine is unchanged.
9 — The conjunctiva is discolored yellow.
10 — There are no general symptoms present in this disease.

Course:

The course of this disease is months and years. (2 to 3 years).

Prognosis:

The prognosis depends upon the course. If the animal shows brain symptoms, along with colicky symptoms, the prognosis is unfavorable.

In chronic cases the prognosis is more favorable.

Treatment:

This disease is practically incurable, but the following line of treatment may be given a trial.

1 — Lugol's solution intertracheally, one drachm daily.
2 — Arsenic in form of Fowler's solution, one ounce three times daily.
3 — Iron. Give tincture of iron chloride in one drachm doses, three times daily.

DISEASES OF THE SPLEEN.

The spleen is the organ chiefly concerned in the manufacture of blood corpuscles. When there is an infectious or contagious disease present, there is apt to be a diseased condition of the spleen.

Clinically there are the following forms:

1 — A chronic induration of the spleen, seen in leukaemia.
2 — Amyloid degeneration of the spleen.
3 — Ecchinococcus in the spleen. (Parasite disease).
4 — Ulceration of the spleen. This form is seen in glanders or carcoma of the spleen.

Symptoms:

The symptoms are emaciation with a varying appetite. After two or three months cachexia sets in and the animal dies.

DISEASE OF THE URINARY APPARATUS.

The most common diseases of the kidney which are seen in Veterinary Medicine are:

1 — Acute Nephritis.
2 — Circumscribed Nephritis.

ACUTE NEPHRITIS.

This occurs in the course of infectious and contagious diseases, such as Contagious Pleuro-Pneumonia and Influenza. It may also be caused by various toxic drugs, such as cantharides, large doses of turpentine and similar irritating diuretics.

Pathology:

1 — A swelling and enlargement of the kidney.
2 — The kidney becomes oedematous and friable.
3 — The kidney is usually very oedematous. That side the horse lies on most frequently.

Symptoms:

1 — The urine is usually high colored and cloudy.
2 — The urine contains red blood corpuscles.
3 — The urine is usually scanty in amount.
4 — The animal collapses and is usually in a state of exhaustion.
5 — There is neither stiffness in gait nor soreness, or any similar symptom.

Prognosis:

1 — This disease is usually a symptom and no prognosis is given.
2 — If this is a primary disease the prognosis is unfavorable.

Treatment:

1 — Arecoline, $\frac{1}{2}$ gr. doses, twice daily.
2 — Feed green food, as carrots, etc.
3 — Give very mild diuretics, as formin 30 gr. in water, three times daily.
4 — Give plenty of fresh water to drink.

CHRONIC PARENCHYMATOUS NEPHRITIS.

This runs the course of a long drawn out acute nephritis.

Symptoms:

1 — A very slow progressive emaciation without any apparent cause.
2 — Sometimes there is a paralysis of certain groups of muscles.

3 — The urine may be cloudy or contain albumen.
4 — To make an exact diagnosis it is necessary to hold Post Mortem.

Course:

The course is chronic.

Prognosis:

The prognosis is unfavorable.

Treatment:

Practically incurable.

CYSTITIS.

This is an inflammation of the bladder. Inflammation of the bladder is usually due to some other disease and rarely occurs as a primary disease. Frequently the bladder becomes adherent to a portion of bowel, causing a chronic cystitis.

Forms of Cystitis:

1 — Diphtheritic.
2 — Fibrinous.
3 — Suppurative.

Cystitis may also follow inflammatory or suppurative processes in the kidney. It may also occur from passing an infected catheter. Diphtheritic cystitis always causes severe general symptoms and results fatally.

Pathology:

This is usually chronic and causes an induration of the mucous membrane and connective tissue. Sometimes it leads to the formation of granulation tissue, and this leads to a hypertrophy of the walls of the bladder.

Symptoms:

1 — Painful urination. The urine is voided with very little force.

2 — The urine is often badly decomposed when passed. (Offensive).

3 — Sometimes the urine has strong ammoniacal odor and is very irritating.

Prognosis:

The prognosis is generally unfavorable.

Treatment:

1 — One tablespoonful of borax in drinking water three times daily.

2 — Potassium chlorate, one tablespoonful in drinking water three times daily.

3 — Formin, 30 gr. in bucket of water three times daily.

4 — Carefully wash out bladder with Ag NO_3 1%.

5 — Fluid Extract Corn silk, $\frac{1}{2}$ oz. twice daily.

PARALYSIS OF BLADDER.

This is usually secondary, coming on from some other disease, very rarely occurring primarily.

Symptoms:

1 — The urine is voided in a small stream and is of uncertain quantity.

2 — The urine may drop steadily.

3 — As a result of this constant dribbling, the parts are usually inflamed.

4 — Rectal examination of the bladder shows it to be quite full of urine.

Course:

The course is acute.

Differential Diagnosis:

Urethral calculus.

Prognosis:

The prognosis depends upon the cause. If due to calculi it is usually favorable.

Treatment:

1 — Catheterization and washing out bladder with Ag NO_3, 1%.
2 — Formin, 30 gr. in water three times daily.
3 — Eserine, 1 gr. every six hours hypodermically.
4 — Rhus Tox in ten drop doses every four hours.
5 — F. E. Comsiek ½ oz. every four hours.

ULCERATION OF BLADDER.

This is caused by an infection from above in the urinary tract.

Symptoms:

1 — Constant urination.
2 — The urine is creamy or cloudy and contains pus or mucous.
3 — Painful urination.
4 — Pressure on bladder causes great pain.

Course:

The course is long drawn out.

Prognosis:

The prognosis is unfavorable.

Treatment:

1 — Formin, 30 gr. three times daily in water.
2 — Salol, 30 gr. three times daily.
3 — Methylene blue, gr. 10, three times daily.

HYPERAESTHESIA OF THE URETHRA.

This occurs mainly in geldings, but may occur in stallions. It consists of painful micturition. The animals spread out and urinate often, only small quantities are thrown out at a time. The animal shows colicky symptoms.

Diagnosis depends upon:

1 — Geldings.
2 — Colicky symptoms.
3 — This is seen in work horses after a hard pull.

Prognosis:

The prognosis is favorable.

Course:

The course is acute. Two to three days.

Treatment:

1 — Catheterization most important.
2 — Formin, 30 gr. three times daily in water.
3 — Plenty of fresh water to drink.
4 — Arecoline, $\frac{1}{2}$ gr. every twelve hours.

AZOTUREA.

Haemoglobinuria.

All horses do not seem to have the same susceptibility to this disease. The age, color, sex, breed does not seem to make any difference. Horses under three and over fifteen do not seem to be affected so commonly. Horses from five to eight seem to be most commonly affected.

The condition of the animal seems to have considerable influence upon the susceptibilty of an animal to an attack. Usually well fed, fat horses that are accustomed to a fixed

amount of work are attacked. Thin and poorly nourished horses are very rarely affected. Extremely fat horses seem to be predisposed to the disease. This disease usually comes on after a period of rest on regular feed in horses accustomed to a fixed amount of work.

Some authorities seem to think that Azoturea is brought on by a chill or a chilling of the body. This theory is based on the fact that it comes on only after the horse is taken out of the barn. Some authorities seem to think it is a toxic disease. Azoturea occurs most frequently in the fall and spring months.

Pathology:

The parts affected are the musculature, the blood, the spinal cord, and the kidneys. In the course of the disease the heart and liver becomes involved.

The Muscles:

These undergo parenchymatous degeneration, attacking the croup and loin muscles mostly. Under some conditions the shoulder muscles are the seat of trouble. The condition of the muscles becomes a great deal worse after the patient has lain for several days, the circulation is hindered as well as the respiration. Later on the musculature becomes of a dark brown color. If the animal is sick for any length of time, the muscles undergo fatty degeneration. On the cut surface of the muscles, small haemorrhagic spots may be seen.

The Blood:

The blood loses great quantities of haemoglobin. Then there is a dissolution of the red corpuscles. The blood coagulates very slowly and is very pale.

The Red Marrow:

This undergoes a multiple haemorrhagic infiltration. The posterior portions of the spinal column seem to be mostly affected. The diaphysis and epiphisis of the long

bones are markedly changed. On section there are vast haemorrhages into the marrow. These are usually small but may be as large as a walnut.

The Kidneys:

In mild, subacute or chronic cases there are no perceptible changes in the kidneys.

There is an acute parenchymatous inflammation, causing swelling and softening of the kidneys. Sometimes the kidneys become extremely soft.

The bladder is usually partially paralyzed and contains great quantities of urine, haemoglobin and white blood corpuscles.

The spinal chord is infiltrated and the veins are filled with dark blood. The liver is swollen and enlarged, the spleen is usually intact. The lungs are oedematous and the heart is dry and hard. In the body cavities there is found a bloody transudate. The cadaver has a tendency to decompose rapidly.

Symptoms:

This disease is feverless. The digestion seems to be intact, and the increase in respiration seems to be due to pain in the muscles and bones. The stiff gait or apparent paralysis is also due to pain.

Symptoms:

1 — The main symptom consists in stiffness of various groups of muscles and a loss of locomotion of that part of the body. This usually affects the hind part, and the animal cannot get up. Animals that are attacked in the stall usually lie down, but horses that are affected out of the stall, or away from the barn usually try to stand up. The symptoms of this disease appear very rapidly, sometimes they come on in a very few minutes.

2 — There is a hardness of the muscles affected. The animals as a result lie stretched out flat on the side. Generally when the animal is moved it collapses.

3 — The animals are very restless and nervous. In severe cases they show symptoms of congestion of the brain. If they are down they usually pound the head violently.

4 — The animals are usually covered with a cold sweat, which drops off of the abdomen. This sweat does not appear after the first symptoms pass off.

5 — In some cases the secretion of urine is increased but as a rule it is decreased. The urine is thick in consistency and chocolate or coffee colored.

6 — Peristalsis is usually suppressed.

7 — The pulse is rapid, 75 to 100 per minute, sometimes it becomes quite weak and imperceptible, but in most cases is good.

8 — The visible mucous membranes are congested and icteric.

9 — The respirations are increased.

10 — The appetite is usually suppressed.

11 — If the animal lies on one side too long, it is apt to become affected with decubital gangrane. *Decubitis.*

Course:

The course may be:

1 — Acute.

2 — Subacute.

An acute case lasts from five to ten days, a subacute from three to five.

Azoturea terminates in:

1 — Death.

2 — Recovery.
3 — Paralysis.

Mild cases usually recover in from eight to twelve days. More severe cases in twenty to thirty days.

Signs of recovery:

1 — The animal is able to rise with ease.
2 — The musculature becomes soft.
3 — The pulse returns to normal.

Complications:

1 — Decubitis. This is the result of sweating and lying in one position for a long period of time.
2 — Paralysis of various groups of muscles. This is usually a result of the degeneration of the muscle tissue itself.

The diagnosis depends upon:

1 — The history of the case.
2 — Dark or coffee colored urine.
3 — Muscular tremors and nervousness.

It may also happen that there may be:

1 — A paralysis of the crural nerve.
2 — A rupture of the achilles tendon.
3 — A fracture of the pelvis.
4 — A fracture of the lumbar vertebrae.
5 — Colicky symptoms.
6 — Poisoning due to over dosage of drugs.

Prognosis:

The prognosis in cases that stand is usually favorable. No mortality. The prognosis in cases that go down is usually less favorable. Mortality 25%.

Treatment:

1 — Phlebotomy.
2 — Arecoline, $\frac{1}{2}$ gr. every six hours.

3 — Coffeine Citrate, 40 to 100 gr. hypodermically. Repeat as often as necessary to keep pulse regular and animal quiet.
4 — Formin, 30 gr. every four to six hours.
5 — Wash out bladder carefully.

* * * *

1 — Salol, 30 gr. every six hours.
2 — Turpentine, one ounce every four hours.
3 — Sodium Bicarbonate in large oft repeated doses.

MOROSIS.

Dummies.

This consists of a chronic incurable, characteristic disease of the brain, which is accompanied by more or less symptoms of idiotism.

This disease is usually due to a collection of serum in the ventricles of the brain. Some authorities seem to think that it may be due to ulceration of the periostium or the brain coverings. In rare incurable cases exostosis have been found to exist on the inside of the cranial cavity. An inflammation of the corpora striata may cause very similar symptoms as those of dummies.

Commonly there are two forms of this disease:

1 — Idiopathic, primary, sporadic.
2 — Secondary, result of some other disease.

Secondary is usually due to chronic congestion, or the formation of great quantities of serum pressing on the vessel walls and brain. Morosis very rarely occurs in well bred horses of any breed, especially runners and trotters. It is seen mostly in coarse, phlegmatic horses that are heavy feeders and those doing slow work. Usually a horse of a lymphatic nature.

As to sex, geldings seem to be the most susceptible. Some authorities seem to think that the process of castration favors this greatly. The shape of the brain box seems to be a predisposing cause. Horses with a large brain cavity seem to be most apt to become affected, for this allows great quantities of serum to gather and press on the brain. This cause may be hereditary for it is known that some stallions produce many cases of this kind. It has been known that a horse having a case of chronic or mild morosis was seemingly not affected with the disease after the reaching fifteen to eighteen years. Horses between the ages of eight to fourteen are most commonly affected.

Such external causes as hard driving, high checking, over feeding of proteids, stabling in damp, poorly ventilated stables, extreme exhaustion in hot weather may be some predisposing factors.

Symptoms:

1 — There are disturbances of brain functions, correlation, co-ordination.
2 — The sensorium is depressed. (Mind is not clear).
3 — Depression of the temperament of the animal.
4 — The tactile sense is destroyed.
5 — The animal cannot locomote properly.
6 — It stands with the front legs crossed and in the same position for hours.
7 — The pulse is decreased in frequency.
8 — The respirations are decreased.
9 — Peristalsis is absent.
10 — The animals sometimes appear to be all right. will eat and suddenly forget, they stand with hay in mouth, look blank, the pupils are dilated, the upper lid is dropped, the ears are lopped or moved one at a time.

11 — The head is lowered and frequently in a cower.

12 — If the animal is suddenly attacked or hears some strange sound, they act as though they are greatly surprised and sometimes frightened. The head may be held sideways as a result of this.

13 — The appetite is very variable. Some animals eat well, others do not eat at all.

14 — When walking animals are very apt to tramp on themselves.

15 — Mild cases of this are very hard to diagnose in the stall.

Course:

1 — Chronic cases are rarely curable, but usually come on at intervals.

2 — It rarely happens that it affects the animal enough to cause it to become worthless. This disease is very rarely the cause of death.

Diagnosis:

This depends upon:

1 — If the mind is clear.

2 — If repeated attacks cause the brain to lose its function.

3 — If the disease is idiopathic or secondary.

Differential Diagnosis:

1 — A depression of the sensorium.

2 — A sluggish temperament.

3 — Over exertion in hot weather.

4 — Acute febrile disease, leaving the animal in a very debilitated condition.

5 — Empyema of the sinuses.

6 — Alveolar periostitis.

7 — Severe eye affections.

8 — Gastric disturbances. (Vertigo).

Prognosis:

The prognosis is usually favorable, depending, of course, upon the number and severity of the attacks.

Treatment:

1 — Arecoline, ½ gr. every six hours.
2 — Pilocarpine, 3 grains every six hours.
3 — Drastic purgatives as gamboge or aloin in drachm doses every six hours.
4 — Salts in two pound doses.
5 — Phlebotomy.
6 — Feed green, soft food.
7 — Potassium Iodide one-half ounce daily.

VERTIGO.

This is caused by the uneven distribution of the blood in the brain. The spells or attacks come on when the horse is worked. This causes an increased arterial blood pressure. The centers of co-ordination seem to be the chief seat of the trouble. It seems to consist of a venous congestion with an arterial anaemia. Secondly the nerves of the blood vessels and the vaso-motor apparatus seem to be affected. A material change in the blood vessels themselves does not take place. This disease seems to occur most commonly in draft horses, less commonly in thoroughbreds and trotters. There are more cases seen in the spring and fall, than any other season of the year.

Symptoms:

The symptoms, as a rule, appear when the horse is in motion.

1 — The first thing noticed is staggering and weaving in the gait.
2 — The horse begins to lean backward and then forward.

3 — The legs begin to spread out.
4 — The animal has a blank stary look in the face.
5 — The head is held low and weaved back and forth.
6 — The pulse is frequent.
7 — The respirations are dyspnoeic.
8 — The animal usually breaks out in a profuse sweat.
9 — There is a trembling of the superficial muscles. These attacks last from one to four minutes.
10 — These attacks usually become intermittent, coming on at various periods, usually lasting some months.

Differential Diagnosis:

1 — Acute congestion of the brain.
2 — Chronic heart failure.
3 — Congestion of the lungs.
4 — Over-exertion.

Prognosis:

This is usually favorable.

Treatment:

1 — Phlebotomy.
2 — Artificial stimulation.
3 — ½ ounce fluid extract Digitalis. (Do not repeat.)
4 — Arecoline, ½ grain twice daily.

ABSCESS OF THE BRAIN.

This consists of a circumscribed suppuration of the brain. This usually happens as a result of an injury to the brain box, or by metastisis. Horses suffering with this disease usually undergo a degenerative process in the brain. This occurs most commonly as a secondary disease in:

1 — Contagious Corrhyza.
2 — Contagious Pleuro-pneumonia.
3 — Distemper.

Symptoms:

1 — The symptoms are those of acute hydrocephalus.
2 — There is great depression of the sensorium.
3 — The animal weaves back and forth.
4 — The tactile sense is lost.
5 — The pulse is 80 per minute.
6 — The temperature is 103°.
7 — Usually in about four days the animal dies.
8 — It may happen that the fever is not present for several days.
9 — The animal usually presses head against something. Presses with great force.

Course:

In milder cases the course is about three days. In acute cases it almost always ends in death.

CONGESTION OF THE BRAIN.

This disease is an accumulation of blood in the cranial cavity. It may be due to an impediment in the outflow, or an excessive amount of blood brought to the brain.

It may be divided into:

1 — Active congestion.
2 — Passive congestion.

Active congestion nearly always occurs in young animals, as a rule as a result of severe bodily exertion, overdriving, or extreme excitement in hot weather. It has been known to occur in transport. It also may occur as a result of sunstroke, or becoming overheated on hot, stuffy days. It occurs secondarily in the course of a great many

diseases, nearly always infectious diseases, such as distemper of dogs, etc. It may follow some previous diseased condition of the brain.

Passive congestion of the brain usually occurs as a result of compression of the jugular. Tight throat latch, tightly fitting collars, high checking, or some heart disease. It may also occur in a gastro-intestinal affection where there is an accumulation of gas in stomach and bowels.

The main symptoms of a passive hyperaemia is that of depression.

Symptoms of acute hyperaemia:

1 — Great excitement.
2 — There is depression of the sensory nerves.
3 — Animals may show furiousness, (rabiform symptoms), causing animals to plunge forward and run into objects.
4 — Animals kick and bite at various objects without any cause.
5 — In some cases the animal will fly back suddenly, breaking the halter strap.
6 — In general the animal is extremely restless and excited.
7 — On laying the hand over the skull, a rise in temperature will be indicated.
8 — After this condition has existed for several hours the animal goes into a stage of depression.
9 — In this condition the animal appears sleepy and usually rests the head on some portion of the barn.
10 — The animal may perform an automatic movement of some kind.
11 — The pupils become dilated.
12 — The appetite is intermittent.
13 — The pulse is usually a little above normal.

Differential Diagnosis:

Inflammation of the brain.

Treatment:

1 — Apply ice packs to the head.
2 — Phlebotomy.
3 — Mild laxatives.
4 — Small doses of nux vomica, aloes.
5 — Feed the animal bran mashes and green food.
6 — Give animals plenty of water to drink.
7 — Aconite.
8 — Veratrum.
9 — Arecoline.

EPILEPSY.

This is a chronic disease characterized by intermittent attacks or spasms. The mind is affected in this disease.

There is nothing definitely known about the cause.

Symptoms:

There are two forms:

A. True.
B. False.

A. True.

1 — While in motion the animal is suddenly attacked with spasms. These very rarely come on in the barn or in the field. They consist of twitching or jerking of the superficial muscles. Animals usually rear and fall to the ground, unconscious. The eyes are rolled and there is forced gritting of the teeth.

2 — In rare cases the animal may have convulsions.

3 — These attacks last from four to eight minutes.

B. False.

This consists of a very mild case of Vertigo. The at-

tacks are mild and as a rule last only about one to two minutes. The symptoms are identical with true Vertigo, but not so marked.

Course:

The course is:

1 — Chronic.

2 — The attacks usually recur in from six to eight weeks.

Prognosis:

The prognosis is unfavorable.

Treatment:

This disease is practically incurable, but the following treatment may be used.

1 — Phlebotomy.

2 — Bromides.

3 — Arecoline.

ECLAMPSIA.

Causes:

The cause of this disease is not exactly known, but it is supposed to be an auto-intoxication. It usually appears about the time of parturition.

Symptoms:

The symptoms are identical with those of strychnine poisoning, except in Eclampsia the animal is conscious.

1 — The body becomes stiff.

2 — The muscles jerk, in some cases contract, causing tonic spasms.

3 — The pulse is frequent and irregular.

4 — The respirations are dyspnoeic.

5 — These spells or attacks last from five to ten minutes, usually recurring about once an hour.

Prognosis:

The prognosis is usually favorable. Severe cases end in death, milder cases in recovery.

Treatment:

1 — Potassium Bromide.
2 — Chloral Hydrate.
3 — Inhalations of ammonia.
4 — Arecoline.

THERMIC FEVER.

Thermic fever occurs as a result of over-exertion in extremely hot and sultry weather.

Cause:

The cause is supposed to be paralysis of the thermic centers in the brain, causing it to lose control over the body. A horse that is not used to extremely hard work is most apt to be affected. However, any horse may become affected with this disease.

Symptoms:

1 — The animal becomes lagging in gait while being driven.
2 — The animal weaves back and forth and eventually goes down.
3 — After going down it is apparently in a helpless condition.
4 — The sensorium depressed.
5 — The body temperature is extremely high.
6 — The animal usually lies prostrate on the ground and is unable to help itself.
7 — The respirations are extremely fast.

Course:

The course of this disease is acute.

Prognosis:

The prognosis is usually favorable.

Treatment:

1 — Pouring ice water on animal and cooling it off as rapidly as possible.

2 — Something to produce sweating, as pilocarpine in three grain doses or arecoline, one-half grain.

3 — Artificial stimulation.

THE EFFECT OF LIGHTNING ON HORSE.

Lightning unless it comes in direct contact with the animal very rarely kills it. After the course of a few hours there is generally some symptom noticed such as:

Symptoms:

1 — Paraylsis of a nerve or paralysis of various nerves.

2 — Deafness or paralysis of a portion of the body, such as paraplegia, haemoplegia.

2 — In case this paraplegia becomes very severe the animals are unable to rise, or if they can rise there is seen an exceedingly weaving gait.

3 — The pupils are dilated. In some cases the animal is totally blind.

4 — It quite frequently happens that an animal may apparently be all right for several weeks, but in the course of fifteen to eighteen days paralysis of some nerve will occur.

5 — The musculature of entire body is always affected more or less.

6 — As a rule the affected animal is very stiff.

Prognosis:

The prognosis is usually favorable except in cases of deafness, the horse usually remaining deaf the rest of his life.

Treatment:

1 — Apply ice packs to the brain and bowels.
2 — By way of the mouth give great quantities of vinegar.
3 — Dilutions of acetic acid.
4 — Inhalations of ammonia.
5 — Blistering in region of paralysis.
6 — In case animal is emaciated give strychnine.

ACUTE METRITIS.

Septic Metritis.

This usually occurs as a result of difficult parturition in which there is some infection conveyed into the uterine cavity, or if there was undue roughness on the part of the attendant.

Causes as a result of this condition:

1 — Wounding the uterine wails.
2 — Infection.

Wounding the uterus happens in removal of the foetus in a rough manner or a forcible removal of the placenta. It may also result in a paralysis of the uterus.

By means of the lymph the infection is carried to all parts of the body. This results in a typical pyaemia, with cloudy swellings of the internal organs and gastro-enteritis.

Symptoms: (History of case).

1 — Lameness, symptoms of laminitis.
2 — En elevation of temperature, 104.

3 — Almost total suppression of the appetite.
4 — A foetid discharge from the vulva.
5 — The pulse is rapid and weak.
6 — Animals seem to be in great pain.
7 — The respirations are dyspnoeic, the abdomen is tucked and held perfectly quiet.
8 — Great weakness and exhaustion.
9 — Continual straining as if to urinate.

Prognosis:

1 — If treated properly the prognosis is favorable.
2 — If untreated the prognosis is unfavorable.

Treatment:

1 — Phlebotomy.
2 — Blanket animal well and bandage the legs.
3 — Disinfection of uterus. Irrigate the uterus once every two hours, with some mild non-irritating antiseptic, as potassium permanganate. This is the most important part of the treatment, and should be carefully carried out.
4 — Strychnine or Nux Vomica.
5 — Artificial Stimulation.
6 — Linseed tea to keep bowels open.

CHRONIC CATARRH OF THE UTERUS.

Chronic Catarrhal Endometritis.

Leucorrhoea — Whites:

This usually occurs in mares that have given birth, but has been known to occur in mares that have not been pregnant. Usually seen between the ages seven and fifteen. It consists of a chronic, incurable degeneration of the mucous membrane of the uterus.

Pathology:

This disease progresses very slowly, and eventually leads to a parlysis of the uterus. From the first it leads to a contraction of the uterus. Pus cocci enter from external sources, this leads to a chronic suppurative inflammation, with erosious ulcers on the mucous membrane. Sometimes very severe cases pass to neighboring portions and the entire genito-urinary tract becomes involved. In the uterus there is formed a thick, slimy mass, which consists of pus, epithelium, moucous and white blood corpuscles. At given intervals the mouth of the womb (os uteri) opens and there is a great quantity of this product discharged. The entire uterus becomes thickened, rough and vascular.

Symptoms:

1 — A whitish or greyish discharge from the vulva in varying quantities, this is either constant or may appear at given intervals.

2 — The discharge may be worse at times.

3 — The act of urination seems to cause a little inconvenience as the animal will strain considerably after this.

4 — If the disease has run months or years the animals appear unthrifty and do not seem to assimilate properly.

5 — Later on the appetite becomes changeable.

6 — The conjunctiva is discolored a dirty red or icteric.

7 — If the discharge becomes copious in amount the vulva and the inside of the hind legs becomes covered with erosious ulcers.

8 — By manual exploration the os uteri is found opened so that two or three fingers may be passed into it.

9 — If the disease becomes remittent and the attacks very severe the pulse will be rapid and weak.

10 — The animals usually die in this disease from cachexia, the entire genito-urinary tract being involved.

Prognosis:

The prognosis is unfavorable in later stages, favorable in first stages.

Treatment:

1 — Later on in the course of the disease, treatment is almost worthless.

2 — Arsenic and tonics.

3 — Wash uterus with creolin, tannin, or give eserine hypodermically.

URTICARIA.

Nettle Rash.

Hives

This disease is characterized by swellings in the skin, which are sharply defined, and are about the size of a hazel nut or as large as a walnut.

Causes:

1 — The supposition is that Urticaria is due to some fault in the feeding. Either too much food or food of an inferior quality.

2 — It is usually seen in horses that have been fed large quantities of clover.

3 — It is also seen as a symptom in Distemper, Contagious Corrhyza, Catarrh of the Respiratory tract or any gastric affection.

The supposition is that the blood contains a specific toxine and this comes in contact with the skin, causing eruption. It may happen that this disease will appear and at the same time the animal is in an apparently healthy condition.

This swelling of the skin consists in an infiltration of blood, serum and corpuscles. The vaso-motor apparatus seems to be affected and the blood vessels in this region become dilated and there is a transudation of serum in the substance of the skin itself.

Nettle Rash or Urticaria may appear in two forms: Acute or chronic.

Symptoms:

1 — Nettle rash appears in all parts of the body, and attacks especially the thin-skinned portions of the body.
2 — The swellings vary in size from that of a hazel nut to one's fist.
3 — In rare cases these become confluent and extremely large.
4 — These symptoms appear very suddenly.
5 — Usually the upper eyelid becomes more or less infiltrated.
6 — By manual examination of these swellings an oedema can be readily felt.
7 — As a rule these swellings only last one to two days, at which time there is resorption of the exudate.
8 — There generally seems to be more or less itching.
9 — There are no general symptoms at all in this disease.
10 — In very rare cases there is a slight fever, but this is very rare.

Course:

Acute form lasts from two to four days.

Chronic form lasts one to three weeks or longer. It usually disappears with resorption of the exudate, but it may happen that from time to time, there may be a new transudation and a new swelling formed.

Prognosis:

The prognosis is very good.

Differential Diagnosis:

1 — Purpura Haemorrhagica.
2 — Eczema.
3 — Herpes Tonsurans.
4 — Glanders of the skin.

Treatment:

The animal recovers from this disease without any [illegible] three days.

1 — Internally mild laxatives.
2 — Externally, astringent washes.

SPONTANEOUS SWEATING OF BLOOD.

This usually occurs as a complication in an infectious or contagious disease, but a spontaneous sweating of blood in various parts of the body may be found under various circumstances. It is seen most commonly on the shoulder, the side of the neck and chest. It is seen more often in the summer than in the winter.

Cause:

The exact cause of this disease is unknown, but it is supposed to be due to a haemorrhagic infarct or to some disturbance of the vaso-motor apparatus.

Prognosis:

The prognosis is good.

Treatment:

Consists of antiseptic astringent washes as white lotion.

ITCHING.

Pruritis.

Idiopathic itching without any apparent cause whatever often appears in the horse. The only apparent symptom of this disease is a roughening of the skin, due to the continual rubbing and irritation, trying to overcome the itching.

Some authorities seem to think that the feeding is at fault, but so far as the exact cause is concerned, at the present time nothing is known.

Symptoms:

Consists of rubbing and scratching. This sometimes becomes so severe that the hair falls off of affected parts.

Differential Diagnosis:

1 — Mange.
2 — Lice.
3 — Eczema.
4 — Various other parasites.

Prognosis:

The prognosis is unfavorable.

Treatment:

1 — Externally, antiseptic washes.
2 — Internally, arsenic.
3 — R
Camphor gum.
Carbolic acid āā
Apply with a brush to parts affected.
R
Camphor gum.
Chloral.
Apply with a brush to affected parts.

A local pruritis is often noticed in the region of the tail and mane. The cause of this disease is nearly always filth. Being the long-haired portions of the body they are hard to keep clean. Animals will rub tail and mane to such an extent that the hair falls out or becomes worn out.

Treatment:

1 — Keep clean, wash with soap and water.
2 — Apply some antiseptic solution as creolin or white lotion.

NODULES IN THE SKIN DUE TO OVERHEATING.

Often-times overheating in horses is followed by a Nodular Exanthema of the skin. This appears most frequently in the spring after a few very warm days. In the winter and the cold parts of the year, the skin generally remains intact, but in the warmer parts of the year, spring and summer, the hide becomes covered with small nodules. This causes the hair to fall out in a great many cases, leaving behind hairless areas.

As a rule these coalesce, forming spots about the size of a quarter. In a very severe case it may happen that there will be postules formed, and these postules may become infected and then suppurate.

Prognosis:

The prognosis is unfavorable.

Course:

Each attack usually runs a course of from five to six weeks before healing takes place.

Treatment:

Potassium Carbonate and Vaseline, one to five. Apply to affected parts.

ERYTHREMA.

This consists of a diffuse reddening of the skin, inflammation of the papillary body, the epidermis being covered with small, round areas.

There are two kinds:

1 — Symptomatic.
2 — Idiopathic.

Cause:

The cause is not known. It is supposed to be some toxic product contained in the blood. This probably is obtained in the food.

Prognosis:

The prognosis is good.

Treatment:

1 — White lotion.
2 — Three per cent. solution of alum.

ECZEMA.

There are the following common forms:

1 — Simple eczema.
2 — Simple generalized eczema.
3 — Chronic papular.
4 — Pustular eczema.
5 — Dry eczema.

1 — A Simple Local Eczema.

This is an acute eczema with the formation of small vesicles which dry up in a very few days and leave scabs behind. This particular form of eczema usually affects the head, nose and nostrils. It is usually seen to accompany

contagious corrhyza, and catarrhal affections of the respiratory tract. This disease consists of a great number of small vesicles which are about the size of a pin head. These become confluent and discharge forming a mass, with hair and dirt. After healing this leaves no scar.

Course:

The course is two to three weeks.

Treatment:

1 — White lotion.
2 — Zinc ointment.

2 — A Simple Generalized Eczema.

In this disease the eruption covers the entire body. The vesicles are about the size of a bean. They discharge and after a very few days dry up. As a rule the hair and this serum forms a mat. This form is often seen in gastric affections. If this disease becomes very severe it causes itching.

Course:

The course is two to four weeks.

Prognosis:

The prognosis is favorable.

Treatment:

1 — Creolin ointment.
2 — Zinc ointment.
3 — Zinc oxide.
Alum and tannin.
Bismuth subnitrate.
Sodium salicylate.
The above may be used separately or together as a dusting powder.

3 — Chronic Papular Eczema.

This occurs in patches all over the body. The individual lesion is about the size of a ten cent piece. From this there exudes a yellowish exudate, which runs out over the hair and dries up. After eight to fourteen days the hair comes out, and there is left a hairless spot. This disease causes considerable itching, and as a result of this itching the skin is usually injured.

Prognosis:

The prognosis is unfavorable. The animal never dies as a result of this disease, but it very hard to relieve.

Treatment:

1 — Potassium carbonate, vaseline, 1 to 5.
2 — Bismuth subnitrate or vaseline, 1 to 5.
3 — R
Bichloride, 1
Alcohol, 5.
R
Formalin, 1
Water, 10.
Apply with a brush.
R
Carbolic acid,
Tr I āā
Apply with a brush.

4. Dry Eczema.

This presents the same symptoms as acue contagiosa, except that it is not infectious.

Symptoms:

1 — First stage of this disease, animal appears as though it were sweating.
2 — Later on the skin becomes inflamed.

3 — The pulse becomes accelerated and the animal refuses to eat.

4 — The legs are covered with an exanthema. They become sweaty and the animal can hardly walk.

5 — The lesion itself consists of a conglomerate postule covered with a dark brown scab.

6 — This leaves an ulcer, which usually discharges a greyish pus.

Course:

The course is usually of from two to three months.

Differential Diagnosis:

Acne Contiagiosa.

Prognosis:

The prognosis is unfavorable.

Treatment:

1 — Oil of tar.

2 — Lugol's solution.

3 — Alcohol and bichloride.

4 — Red precipitate ointment.

R

Alcohol, 5.

Bichloride, 1.

Apply with a brush.

MANGE.

General symptoms of mange.

In order to make a proper diagnosis of mange microscopic examination must be made and mange mites determined.

General symptoms of mange are:

1 — Itching, (pruritis).

2 — Reddening of the skin.

3 — Loss of hair or wool, as the case might be.
4 — Thickening of the skin, and effusion on the skin, with crust formation.
5 — Itching is most intense when animal is warm and in the night time.
6 — The psoropts are most active and cause most intense itching.
7 — The itching is supposed to be due to an acrid fluid, which is produced in the lesion.
8 — There is usually the appearance of a papule, which later on forms a scab and under this scab there is usually a female.
9 — In making the diagnosis scrapings should be taken under the scabs.
10 — Following this scab the hair falls out, which leaves hairless portions or areas covered with scabs behind.

Symptoms of sarcoptic mange of the horse:

This usually begins on the withers, extends to the neck, then to the shoulders and then all over the body. The legs are the last to be affected. This form of mange never affects the mane and the tail.

Psoroptic mange.

This affects mainly the long haired portions of the body and never affects the limbs. Usually begins on the poll and extends from there to the withers. It spreads very much slower than the sarcoptic mange. The first noticeable thing is that the hair is tangled. The skin becomes covered with scabs and scales.

Psoroptic mange of the ox.

This usually begins at the root of the tail and works forward through the rest of the body. It very rarely affects

the limbs. This form always becomes worse when the animals are stabled. It is better when animals are on pasture. It also becomes worse in cold weather. The lesions are exactly those of general symptoms of mange.

Symbiotic mange of the ox.

This usually localizes itself at the root of the tail. It spreads very slowly and the main symptom is simply that of itching, (Pruritis).

Scabies in Sheep.

This occurs in those portions of the body that are not covered with wool. It affects the limbs and the face. It usually begins on the upper lip and around the nostrils. It spreads from here all over the body and the limbs producing symptoms of mange. Sheep constantly rub face.

Psoroptic Scabies of Sheep.

This is commonly called sheep scab. It affects the wooly portions of the body. The first thing noticed is that the wool becomes tufted, then Pruritis or itching. The sheep rub themselves and kick. When the wool is parted a papule will be noticed. All over the skin the mange mite can be found. This mite is about as large as a pea.

Follicular mange.

This form of mange is caused by the demodox follicularum. This form of mange usually begins in patches in which there are papules. These papules later on change to a postule. The skin becomes very much inflamed, thickened and the hair falls out. Gradually this condition becomes general.

Mastitis.

The ancients taught that mastitis was due to catching cold and rough handling of the udder or improper milking. Recently we have come to believe that it is due to an infection. The infection gains entrance through the teat canal, passes up the canal and from there infects the entire udder. This causes the decomposition of the milk, this in turn irritates the mucous membrane and the epithelium.

There are three ways in which mastitis may be spread:

1 — By means of the teat and milk duct, (galactogenous mastitis).

2 — By the lymph stream through lesions in the skin and subcutaneous tissue, (lymphogenous mastitis).

3 — By the blood stream (haemotogenous mastitis).

OEDEMA AND PHLEGMON OF THE UDDER.

Toward the end of gestation there is a congestion of the udder and as a result a great quantity of serum is thrown out into the subcutis. After calving the udder becomes very painful and swollen so that milking is almost impossible. The udder is very hot and the skin is reddened. A wound infection may cause the same condition.

Prognosis:

The prognosis is favorable in most cases.

Treatment:

1 — Massage with frequent milking.

2 — Bathe the udder once an hour with warm water.

3 — Warm lard and turpentine, apply with plenty of massage.

4 — Camphorated oil, apply with plenty of massage.
5 — Belladonna ointment, apply freely with massage.
6 — May give nux vomica internally.
7 — Phytolacca is necessary, give five drops every two hours.

ABSCESS IN THE UDDER.

This affects only one quarter in the udder. A hind quarter is more frequently affected than a fore quarter.

Causes:

This is usually due to wounding with a direct infection.

Symptoms:

1 — Fever and general symptoms.
2 — A severe phlegmon with abscess formation.
3 — The abscess involves the parenchymatous and subcutaneous connective tissue.
4 — These abscesses point very slowly.
5 — In rare cases the abscess will discharge into the teat canal.

The discharge from the abscess is very thick and bloody.

Prognosis:

The prognosis is usually favorable.

Course:

The course is about three to four weeks.

Treatment:

1 — Try to cause the abscess to point.
a) Antiphlogistine.
b) Priesnitz packs.

c) Moist heat.
d) Strong liniments.
2 — Open abscess as early as possible.
3 — Treat symptoms as they arise.

CATARRHAL MASTITIS.

This consists of an inflammation of the mucous membrane of the cistern and canal. This inflammation spreads to the epithelium, causing a change in the secretion.

Cause:

Bacteria gaining entrance to the canal.

Symptoms:

1 — The udder feels hard and nodular.
2 — The swelling is low down and affects only one-quarter or a half of the udder.
3 — The gland tissue is not affected in the beginning of the disease.
4 — The milk that is drawn off is watery, flocculent and in some cases cheesy.
5 — This disease usually leads to stenosis or obliteration of the teat canal, causing the animal to lose that quarter. This disease may also lead to a pseudo-hypertrophy causing a so-called "fleshy quarter."

Prognosis:

The prognosis is unfavorable for the milk secretion in that quarter.

Treatment:

1 — Hot water and plenty of massage.
2 — Camphorated oil with plenty of massage.
3 — Strong liniments.
4 — Phytolacca, five drops every two hours.

PARENCHYMATOUS MASTITIS.

This particular form of mastitis is the most common. This involves the mucous membrane of the teat cistern and the epithelium of the gland. As a rule, however, this disease may affect an entire udder or only one quarter. As a general rule only one quarter is affected. Hind quarters become affected more often than fore-quarters.

Cause:

1 — Wounding of the udder.
2 — It is seen secondarily to foot and mouth disease and infectious aptha.

Symptoms:

The symptoms appear after a period of incubation of from two to three days.

1 — The udder is swollen and painful.
2 — The skin is swollen and reddened.
3 — Animal shows great pain on pressure.
4 — The milk is very cheesy in consistency.
5 — Almost complete anorexia.
6 — The temperature is elevated.
7 — The animal may have a chill.

Course:

The course is short. The portion of the udder affected usually becomes atrophic.

Prognosis:

The prognosis so far as life is concerned is favorable but the function of that quarter is lost.

Treatment:

1 — Frequent milking with massage.
2 — Use teat tube.
3 — Treat the same as before.
4 — Preventative treatment consists in careful handling of the udder and proper milking.

SEPTIC MASTITIS.

The cause of this form of mastitis is supposed to be due to metastasis. That is the pus cocci are carried by the blood and then lodge in the udder. It usually follows septic metritis or septic gastro-enteritis.

This disease is not very common but does occur occasionally.

Symptoms:

1— A high fever 103 to 105°.
2 — The pulse is 90 to 100 per minute.
3 — The respirations are 25 to 40 per minute.
4 — The udder is severely swollen.
5 — On milking there comes out a dark, bloody, stinking discharge. In some cases almost pure pus comes out.

Course:

After three to four days the animals usually die. The animal becomes cyanotic, collapses and dies.

Treatment:

No good treatment.

GANGRENOUS DERMATITIS OF THE UDDER.

By means of wound infection the skin and entire udder may become gangrenous.

Symptoms:

1 — One to two days after the infection, the milk appears dark or bluish.
2 — The udder usually swells and reddens a little.
3 — Usually only one quarter is affected.

Course:

The course is two to three days.

Prognosis:

The prognosis is favorable.

Treatment:

Antiseptic ointments.

INFECTIOUS GANGRENOUS MASTITIS.

This disease is contagious and as a rule there is more than one animal affected. This disease appears sporadic and enzootic.

Symptoms:

1 — One quarter of the udder becomes bluish in color and cold.
2 — From the teat there exudes a dark stinking fluid.
3 — No general symptoms except in the first stages of severe cases.
4 — Later on quarter drops off.

Treatment:

Surgical, remove parts affected.

TABES.

This disease occurs in horses, cattle, swine, goats and sheep. It consists of a chronic disturbance of the digestive functions with a continual decrease in the size of the body with a resulting death. This disease usually comes on between the ages of one and two. The process is supposed to be some disturbance in assimilation.

Aetiology:

This disease usually occurs before the animal is three years old. This disease rarely occurs in the summer months, when the animal can get green food, but mostly in winter. The glands in the gastro-intestinal tract become very atrophic and do not secrete properly.

Symptoms:

1 — The first noticeable symptom is that the appetite becomes lessened, and finally is totally suppressed. The animals usually prefer grain to rough food. Only small quantities of food are taken at a time. The animals chew very slowly and often grit the teeth.

2 — There is a decrease in the animal's condition of flesh, their eyes sink into the sockets, neck becomes very thin, ribs show, and abdomen is tucked up.

3 — The hair coat becomes rough, long, dry, and the skin seems to be fast to the subcutaneous tissue.

4 — The feces that are voided are in very small dark brown pellets.

5 — The pulse is increased.

6 — The animals become weak and often are unable to rise.

Course:

The course is chronic, three to six months.

Prognosis:

The prognosis is usually fatal.

Treatment:

1 — Change of feed, feed good, clean, nourishing food.

2 — Give stomachics and tonics.

3 — If possible give green food.

ESSENTIAL ANAEMIA.

This disease consists of a lessening of the red blood corpuscles, a lessening in the amount of blood, a lessening in the fibrin and a lessening in the formation of the red blood corpuscles. They have lost the power of poikilocytosis.

Symptoms:

1 — Anorexia.
2 — The appetite becomes lessened.
3 — The abdomen is tucked up.
4 — The visible mucous membranes are especially light in color (pale).
5 — The sensorium is somewhat depressed.
6 — There is progressive emaciation.
7 — The pulse is small and weak.
8 — On holding hand over heart the heart beats are felt very easily.
9 — Animals have a tendency to decubitis. Decubital ulcers.
10 — There are oedematous swellings in the subcutus.

Course:

This disease usually runs a course of from four to eight weeks. Animals usually die with tabes.

Post Mortem:

1 — On section animals are found to be almost bloodless. All the internal organs are pale.
2 — There are slight haemorrhages into the serous membranes. There is no change in the parenchymatous tissue of the organ.
3 — The spleen is usually enlarged a little.

Differential Diagnosis:

1 — Amyloid degeneration of the liver.
2 — Gastric disturbances.

Prognosis:

The prognosis is favorable.

Treatment:

Preparations of arsenic, iron and iodine.

LEUCAEMIA.

This is a disease in which there is an acute or chronic inflammation of the lymph glands and the spleen with an increased number of the white blood corpuscles. This usually follows some debilitating disease, as distemper, glanders, and contagious pleuro-pneumonia.

As a result of this diseased condition of the lymph glands and spleen, there is an incurable constitutional disturbance of the digestive function.

Symptoms:

The symptoms of this disease are not shown for a long while.

1 — Animals are easily exhausted after being driven.
2 — The visible mucous membranes become very pale.
3 — After the disease has run a course of some length of time, the appetite is suppressed, the pulse is full, and the respirations are somewhat hurried.
4 — In this disease there is a slight rise in temperature.
5 — There is usually a slight swelling in the lymph glands in the region of the head.

Course:

The course is three to six months.

Post Mortem:

1 — There is swelling of the lymph glands.
2 — The consistency of the glands is soft and on section the parenchyma appears to be diseased.
3 — There is also a swelling of the spleen.

Prognosis:

The prognosis is favorable.

Treatment:

Consists in preparations of arsenic and iron.

PSEUDO-LEUCAEMIA.

This is primarily a disease of the lymph glands. It consists in enlarging the tumefaction of the lymph glands, causing them to become as large as a hen's egg or a fist. They may be hard or soft in consistency. The cut surface is of a grey or striped appearance. The supposition is that these enlarged lymph glands cause formation of a specific, infectious material.

This disease is very frequently mistaken for tuberculosis, and is known as "tuberculosis of the horse." In this disease there may be changes in lung, liver and skin, as well as all other organs. The lymph glands in connection with all of these organs become enlarged.

Symptoms:

1 — There is swelling of the lymph glands in region of the head and neck.
2 — The appetite is very irregular.
3 — Oedematous swellings in the skin.
4 — These patients are very susceptible to the formation of haemotomas, especially in the region of the mouth.

5 — This may also lead to the formation of pruritis, in various portions of the body.

Post Mortem:

1 — The lymph glands throughout the body are swollen and enlarged.

2 — There is the formation of lymphomas resembling tuberculosis.

Prognosis:

The prognosis is unfavorable.

Treatment:

Preparations of arsenic and iron.

CONSTITUTIONAL WEAKNESS OF THE NEW-BORN.

This may be brought on by a premature birth. It is, however, a congenital disease in most cases, which is contracted during foetal life. In some studs it is found that some mares always produce this sort of foetus.

Symptoms:

1 — The animal is very thin.

2 — There is general weakness and debility.

3 — The animal can hardly stand and walk.

4 — The appetite is usually good.

5 — The flexors and extensors seem to be most commonly affected.

Prognosis:

The prognosis is unfavorable.

Treatment:

1 — Give the mare plenty of good nourishing food.

2 — See that the colt sucks.

3 — Give the colt artificial stimulation.

4 — May give the colt iron and arsenic tonics.

CONSTITUTIONAL WEAKNESS DUE TO HUNGER.

Hunger Cachexia.

This disease may be due to lack of proper food, lack of quantity of food or over exertion with lack of food.

Symptoms:

1 — Rough, long hair coat.
2 — Dirty, dry skin.
3 — Long, thin neck.
4 — All the muscles are atrophic.
5 — The visible mucous membranes are anaemic and pale.
6 — The pulse is soft and weak.
7 — There is a little rise in temperature.
8 — There are oedematous swellings in the subcutis all over the body.
9 — Great weakness and debility.

Prognosis:

The prognosis is favorable.

Treatment:

1 — Dietitis.
2 — Arsenic.
3 — Iron.
4 — Salt, plenty of common salt.

CONSTITUTIONAL DISEASES OF THE BONE.

Rhachitis.

This disease usually occurs in young animals, the supposition being that there is not enough salts in the food to assist in the formation of bone. It occurs most com-

monly in flesh eating animals. The milk does not contain enough of the calcium salts. Some authorities seem to think that it is due to a specific change in the blood and that phosphorus is necessary. In colts this disease may occur any time up to two years old, in pups it usually occurs before the animal is six months old.

In rhachitis there is a disturbance in the endochondral ossification. The epiphysis becomes enlarged and the marrow becomes ossified. The periostium is also affected and becomes exceedingly thick. Then there is a change in the position of the long bone, owing to the extreme largeness of the epiphysis and the muscular contraction. The bones become bent in various ways.

Symptoms:

1 — The symptoms are those of general debility, weakness, emaciation, the hair is rough and the animals are usually very thin.
2 — There is swelling of the joints.
3 — Animals lie continually.
4 — In a great many cases the carpus and tarsus are changed in position and the toes turned up.

Animals suffering from this disease usually die from inanition.

Prognosis:

The prognosis is favorable if treated, unfavorable if not treated.

Treatment:

Phosphorus oil, one to ten drops.
Syrup of lime, one to two ounces.
Good feed.

GENERAL OSTEOPOROSIS.

This consists in a chronic constitutional change in the bone-marrow with a decomposition and solution of the salts, with a secondary periostitis. It is supposed to be brought about by feeding various feeds, such as feeding colts, clover, hay, etc.

Symptoms:

1 — Lameness and stiffness.
2 — Changing lameness.
3 — An enlargement of the bone.
4 — The visible bones are enlarged, especially in head and legs.
5 — The animals usually show such symptoms as are shown in cachexia.

Prognosis:

The prognosis is usually unfavorable.

Treatment:

1 — Syrup of lime.
2 — Change of feed.
3 — Iodine.

SIMPLE DIARRHOEA.

This is brought on by the so-called catching cold or being unduly exposed to the atmospheric changes. This results in a contraction of the small intestine with increased peristalsis.

Symptoms:

1 — Dullness.
2 — Slight colicky symptoms.
3 — The frequent passage of liquid feces.
4 — There are no general symptoms present.

Course:

Three to fifteen hours or even some days.

Treatment:

1 — Camphor, half ounce.

R

Bismuth Sub., oz. 2

Opium, oz. ½

Divide into four doses, give one dose every two hours.

3 — Alcohol, two ounces and turpentine half ounce.

ACUTE DIARRHOEA IN COLTS.

This occurs after a stagnation of the milk in the udder of the mother, or the mother is unduly excited and heated. This milk is supposed to undergo some decomposition and act as a toxic product.

Symptoms:

1 — Anorexia and dullness.

2 — A foetid diarrhoea (yellow).

3 — The hind quarters are covered with feces.

Prognosis:

The prognosis is usually unfavorable.

Treatment:

1 — Same as simple diarrhoea.

2 — Milk mother and do not allow colt to suck for several days.

CHRONIC DIARRHOEA.

This disease is due to the following causes:

1 — A stasis of blood in the small intestine.

2 — Some diatetic mismanagement.

3 — Bad teeth.
4 — Gastro-intestinal catarrh, (chronic).
5 — An infection in the gastro-intestinal tract.

Symptoms:

1 — Constant diarrhoea, usually appearing while in motion.
2 — These animals usually look rough and poorly nourished, but there are no apparent symptoms present.

Course:

The course is years.

Prognosis:

The prognosis is favorable so far as life is concerned, but for healing very unfavorable.

Treatment:

1 — Powdered nux vomica in small doses.
2 — Tannin in small doses well diluted.
3 — Rhubarb and calomel.
4 — Magnesia, half ounce.
5 — Bismuth and opium.

SIMPLE OBSTIPATION.

This is caused by very dry food, lack of gastric secretion or paralysis of motor nerves in the bowel.

Symptoms:

1 — No feces voided.
2 — There is very little peristalsis.
3 — The pulse, respiration and temperature is normal.
4 — Anorexia and dullness.
5 — The visible mucous membranes are muddy or yellowish.

Course:

The course is one to six days.

Prognosis:

The prognosis is favorable.

Treatment:

1 — Mechanically flushing out the gastro-intestinal tract.
2 — Arecoline in half grain doses.
3 — Pilocarpine.
4 — Powdered nux vomica in small doses.
5 — Aloin in small doses.

PARALYSIS OF THE RECTUM.

This consists of a fibrinous inflammation of the connective tissue, surrounding the rectum involving the nerves of the rectum.

Symptoms:

1 — The passing of feces is almost impossible and accompanied with a great deal of straining.
2 — Usually there is a plugging up of the rectum and colon with continual straining.
3 — After one to two days of no feces passed, colicky symptoms appear.
4 — After this disease has run for two to three weeks the sphincter ani becomes paralyzed and remains open.
5 — This may be accompanied with a paralysis of the bladder.

Diagnosis:

The diagnosis depends upon the history of the case.

Prognosis:

The prognosis is favorable.

Treatment:

1 — Arecoline in half grain doses.
2 — Strychnine.
3 — Nux vomica in small doses.

ACUTE PERITONITIS.

This is an inflammation of the peritoneum. This disease is always secondary to some other disease and never occurs primarily. It is usually due to wounds or following castration as a result of infection. It may also occur as a result of incarcerated hernia or any operation in the region of the abdominal cavity. It may also follow a septic infection of the uterus or a punctured wound of the uterus, vagina or rectum.

Peritonitis may be a serous, fibrinous, suppurative, haemorrhagic or gangrenous process.

Symptoms:

1 — Colicky pains.
2 — Anorexia.
3 — Elevation of temperature.
4 — Pulse hard and fast.
5 — Respirations dyspnoeic, the breathing is done entirely with the ribs, abdomen held stiff.
6 — Peristalsis suppressed.
7 — Visible mucous membranes, cyanotic.
8 — Sensorium depressed.

Course:

The course is from three to fourteen days, depending upon the severity of the attack.

Differential Diagnosis:

1 — Colic.

Prognosis:

The prognosis is unfavorable in a general peritonitis, while in a localized it is more favorable.

Treatment:

1 — Morphia in three to six grain doses.
2 — Calomel.

LYMPHANGITIS.

This is a simple inflammation of the lymphatic vessels and glands.

The cause is not exactly known, but the supposition is that it is due to certain toxic agents, which are brought about by high feeding and rest. This disease nearly always comes on after a period of work. The lymph is carried throughout the body by muscular exertion, and during the period of rest there is a stasis. Lymphangitis very frequently develops in the neighborhood of wounds and is usually a local affection.

Occurrence:

This disease is usually seen in heavy draft horses and horses of a lymphatic temperament, after they have been kept on high feed during work, and then a period of rest on high feed.

Symptoms:

The symptoms appear very rapidly, usually over night.

1 — The temperature is elevated.
2 — The pulse is high.
3 — Labored breathing.
4 — Usually a complete anorexia, with thirst.
5 — Patient very rarely moves, and when it does move is very lame, usually in one hind limb.
6 — On examination of the inside of the thigh, the lymph glands will be found to be swollen, hot and painful.
7 — In this disease there may be chills from time to time.

8 — Usually the subcutaneous connective tissue becomes dropsical and warm.

9 — The lymph vessel itself has the appearance of rope. It is oedematous and corded. Has the appearance of being engorged.

This disease may run such a mild course that general symptoms are not present, simply a swelling.

Results of this disease:

This disease may leave the animal with a chronic affection of one hind limb. Chronic lymphangitis. This condition causes an increase of the connective tissue.

Course:

The course is usually from three to ten days.

Prognosis:

The prognosis is favorable.

Differential Diagnosis:

Farcy or skin glanders.

Treatment:

1 — Remove feed, give patient absolutely nothing to eat for the first two to three days.

2 — Exercise the animal carefully, to establish circulation of the limb.

3 — Externally apply hot water with plenty of massage on the affected portion.

4 — Phlebotomy is also indicated.

5 — Give some laxative internally as small doses of aloes, nux vomica, calomel, etc.

6 — In case the swelling does not subside properly apply white lotion or some similar astringent.

7 — Diuretics may be given such as sodium bicarbonate, iodide of potash, fluid extract digitalis.

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